



**US Army Corps
of Engineers.
Buffalo District**

FUSRAP

FINAL

**RECORD OF DECISION
FOR THE ASHLAND 1
(INCLUDING SEAWAY AREA D)
AND ASHLAND 2 SITES**

TONAWANDA, NEW YORK



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(INCLUDING SEAWAY AREA D)
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TONAWANDA, NEW YORK

April 1998

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I.

**DECLARATION FOR THE
RECORD OF DECISION**

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DECLARATION FOR THE RECORD OF DECISION

SITE NAME AND LOCATION

Ashland 1 (including Seaway Area D) and Ashland 2 Sites
Town of Tonawanda, New York

Within this Record of Decision (ROD), any reference to Ashland 1 with respect to cleanup includes the material located at Area D of the Seaway property and any reference to the Ashland sites or the Ashland properties means Ashland 1 (including Seaway Area D) and Ashland 2.

STATEMENT OF BASIS AND PURPOSE

This decision document presents the selected remedial action for the Ashland sites in the Town of Tonawanda, New York. This remedial action was chosen in accordance with the Comprehensive Environmental Response, Compensation, and Liability Act of 1980 (CERCLA), as amended, and the National Oil and Hazardous Substances Pollution Contingency Plan (NCP).

ASSESSMENT OF THE SITE

Actual or threatened releases of hazardous substances from this site, if not addressed by implementing the response action selected in this ROD, may present an endangerment to public health, welfare, or the environment in the future.

DESCRIPTION OF THE SELECTED REMEDY

Background on Remedy Selection

From 1942 to 1946, portions of the property formerly owned by Linde Air Products Corp., a subsidiary of Union Carbide Industrial Gas (Linde), now owned by Praxair, Inc., in the Town of Tonawanda, New York were used for the separation of uranium ores. The separation processing activities, conducted under a Manhattan Engineer District (MED) contract, resulted in elevated radionuclide levels in portions of the Linde property. Subsequent disposal and relocation of the processing wastes from the Linde property resulted in elevated levels of radionuclides at three nearby properties in the Town of Tonawanda: the Ashland 1 property; the Seaway property; and the Ashland 2 property. Together, these three (3) properties, with Linde, have been referred to as the Tonawanda Site.

Under its authority to conduct the Formerly Utilized Sites Remedial Action Program (FUSRAP), the U.S. Department of Energy (DOE) conducted a Remedial Investigation (RI), Baseline Risk Assessment (BRA), and Feasibility Study (FS) of the Tonawanda Site. In November 1993, DOE issued a Proposed Plan (PP) for cleanup of the Tonawanda Site.

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Numerous concerns and comments were raised by the community and their representatives regarding the preferred alternative identified in the November 1993 PP and the proposed onsite disposal of remedial action waste.

DOE listened to these concerns, and derived a site-specific cleanup guideline for the site based on values important to the community and in compliance with CERCLA, as amended, and the NCP. In September 1997, DOE prepared a revised PP for the Ashland sites. On October 13, 1997, the Energy and Water Development Appropriations Act was signed into law, transferring responsibility for the administration and execution of FUSRAP from DOE to the United States Army Corps of Engineers (USACE). As a result of this transfer, the revised PP was not issued by DOE.

On November 10, 1997, after reviewing the history of the Ashland sites and potential remedial alternatives, USACE issued the revised PP developed by DOE for cleanup of the Ashland sites.

Remedies for Seaway Areas A, B and C, Linde and Linde vicinity properties will be addressed separately.

Selected Remedy

The remedy selected for the Ashland sites is referred to as Alternative 2A in the PP issued on November 10, 1997. Soils exceeding the site-specific derived guideline of 40 picocuries/gram (pCi/g) Thorium (Th)-230 (DOE 1997) will be excavated and shipped offsite for disposal at an appropriately licensed or permitted facility and the site restored with backfill, loam, and seed.

STATUTORY DETERMINATIONS

The selected remedy is protective of human health and the environment, complies with Federal and State requirements that are legally applicable or relevant and appropriate to hazardous substances which are the subject of this response action, and is cost-effective.

None of the practicable remedial alternatives identified for the Ashland sites provides onsite treatment for the materials to be removed. Several alternatives provide for some degree of offsite disposal, including containment at the final disposal location and any treatment, which may be required to meet the standards of the offsite facility. These alternatives thus would achieve reduction in mobility, although no treatment is planned which will reduce the toxicity or volume of the disposed materials. The remaining alternatives would provide either no removal of materials, or onsite disposal, which would also limit mobility through design of the disposal facility. The FS evaluated currently available treatment technologies for treatment during the removal and found none that would be economically and technologically feasible at this time. Thus, the selected alternative achieves the best possible result in terms of satisfying the statutory preference for remedies that employ treatment that reduces toxicity, mobility, or volume as a principal element.

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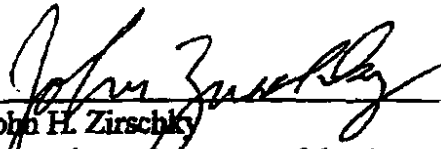
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This remedy will result in radioactive material remaining on-site which is below the cleanup level established in this ROD. Since material will remain on-site, a review will be conducted not later than five (5) years after the initiation of the remedial action to assure that human health and the environment are being protected by the remedial action, in accordance with CERCLA Section 121(c).


Dr. John H. Zirschky
Acting Assistant Secretary of the Army (Civil Works)
108 Army Pentagon
Washington, DC 20310-0108

4/20/98
Date

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**RECORD OF DECISION
FOR THE
ASHLAND 1 (INCLUDING SEAWAY AREA D)
AND ASHLAND 2 SITES**

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ACRONYMS AND ABBREVIATIONS

AEC	Atomic Energy Commission
ALARA	as low as reasonably achievable
ANL	Argonne National Laboratory
ARAR	applicable or relevant and appropriate requirement
BFI	Browning Ferris Industries
BNAE	base/neutral and acid extractable
BNI	Bechtel National, Inc.
BRA	Baseline Risk Assessment
CANiT	Coalition Against Nuclear Materials in Tonawanda
CERCLA	Comprehensive Environmental Response, Compensation, and Liability Act
CFR	Code of Federal Regulations
cm	centimeter
COC	contaminant of concern
cy	cubic yard(s)
DOE	Department of Energy
EIS	Environmental Impact Statement
EO	Executive Order
EQ	environmental quotient
F.A.C.T.S.	For A Clean Tonawanda Site
FBDU	Ford Bacon Davis Utah, Inc.
ft	foot/feet
FS	Feasibility Study
FUSRAP	Formerly Utilized Sites Remedial Action Program
FY	fiscal year
g	gram
HI	hazard index
HQ	hazard quotient
HTRW	hazardous, toxic, and radioactive waste
ICRP	International Commission on Radiological Protection and Measurements
IJC	International Joint Commission
in	inch
K	potassium
LLRWPA	Low Level Radioactive Waste Policy Act
LWV	League of Women Voters
MCL	maximum concentration level
MED	Manhattan Engineering District
mg	milligram
mrem	millirem
NCP	National Contingency Plan
NEPA	National Environmental Policy Act
NORM	naturally occurring radioactive material

Acronym List (continued)

NPL	National Priorities List
NRC	Nuclear Regulatory Commission
NYSDEC	New York State Department of Environmental Conservation
OEW	ordnance explosive waste
O&M	operations and maintenance
ORAU	Oak Ridge Associated Universities
OSHA	Occupational Safety and Health Administration
PAH	polycyclic aromatic hydrocarbon
PCB	polychlorinated biphenol
pCi	picocuries
P.L.	Public Law
PP	Proposed Plan
ppm	parts per million
PRG	preliminary remedial goals
PRP	Potentially Responsible Party
QA/QC	quality assurance/quality control
Ra	radium
RfC	reference concentration
RfD	reference dose
RI	Remedial Investigation
RME	reasonable maximum exposure
Rn	radon
ROD	Record of Decision
s	second
SARA	Superfund Amendments Reauthorization Act
SDMP	Sites Decommissioning Management Plan
SFMP	Surplus Facilities Management Program
SF	slope factor
SVOC	semi-volatile organic compound
TAGM	Technical Administrative Guidance Memorandum
TBC	to be considered
TEDE	total effective dose equivalent
Th	thorium
TMA/E	Thermo Analytical/Eberline
U	uranium
UCL	upper concentration limit
UMTRCA	Uranium Mill Tailings Radiation Control Act
U.S.	United States
U.S.C.	United States Code
USACE	United States Army Corps of Engineers
USEPA	United States Environmental Protection Agency
VOC	volatile organic compound
yr	year(s)

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II.

DECISION SUMMARY

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1. SITE NAME, LOCATION, AND DESCRIPTION

Ashland 1 (including Seaway Area D) and Ashland 2 Sites Town of Tonawanda, New York

Within this Record of Decision (ROD), any reference to Ashland 1 with respect to cleanup includes the material located at Area D of the Seaway property and any reference to the Ashland sites or the Ashland properties means Ashland 1 (including Seaway Area D) and Ashland 2.

From 1942 to 1946, portions of the property formerly owned by Linde Air Products Corp., a subsidiary of Union Carbide Industrial Gas (Linde), now owned by Praxair, Inc., in the Town of Tonawanda, New York, were used separation of uranium ores. These processing activities, conducted under a Manhattan Engineer District (MED) contract, resulted in radioactive contamination of portions of the property and buildings. Subsequent disposal and relocation of processing wastes from the Linde property resulted in radioactive contamination of three nearby properties in the Town of Tonawanda: the Ashland 1 property, the Seaway property, and the Ashland 2 property. Together these three properties, with Linde, have been referred to as the Tonawanda Site (Figures 1-1 and 1-2).

Section 2 of this ROD provides additional details of the ownership and history of the Ashland sites.

1.1 Geology

The Ashland sites are located within the Erie-Ontario Lowland Physiographic Unit of New York (BNI 1993). The Erie-Ontario Lowland has significant relief characterized by two major escarpments, the Niagara and the Onondaga. The elevation of the ground surface is approximately 590 feet (ft) above mean sea level at the Ashland sites (BNI 1987). The Ashland sites are located east of the Niagara River, which is less than 500 ft from the Ashland sites.

The bedrock underlying the Ashland sites belongs to the upper Salina Group and consists of shale, dolomites with layers of gypsum, and occasionally halite of the Akron, Bertie, Camillus, Syracuse, and Vernon Formations. Locally, the carbonate portions of these formations are a massive, fine-grained limey shale with solution channeling through vertical joints and horizontal bedding planes. Massive gypsum layers, up to 5 ft thick, are interbedded within the shales and dolomites.

The Ashland sites are within the Central Stable Region, which is considered tectonically stable. The U.S. Geological Survey classifies western New York as a Zone 3 earthquake risk region (BNI 1987). Earthquakes within this region have been of moderate intensity (Modified Mercalli VI or VII) or less (BNI 1987).

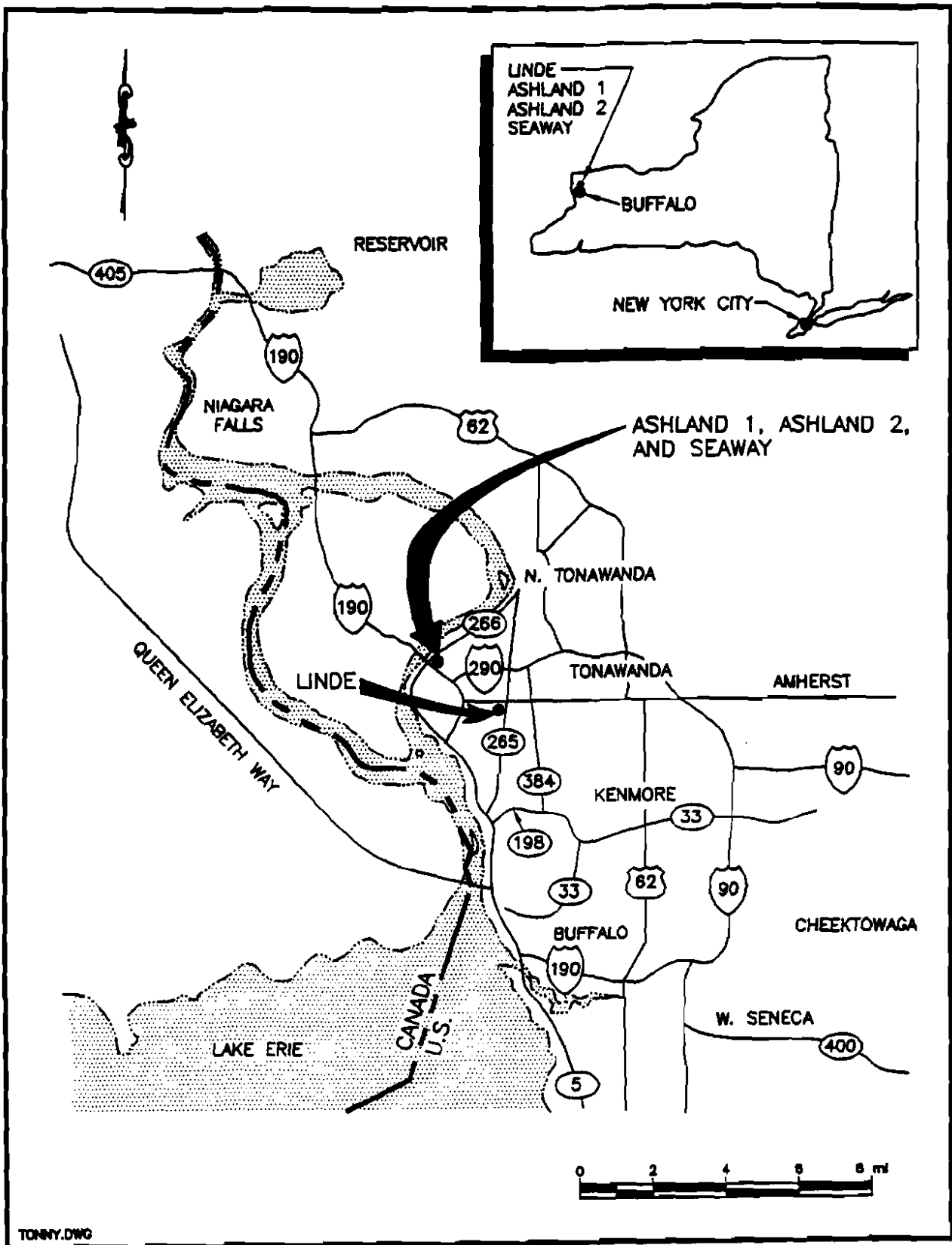
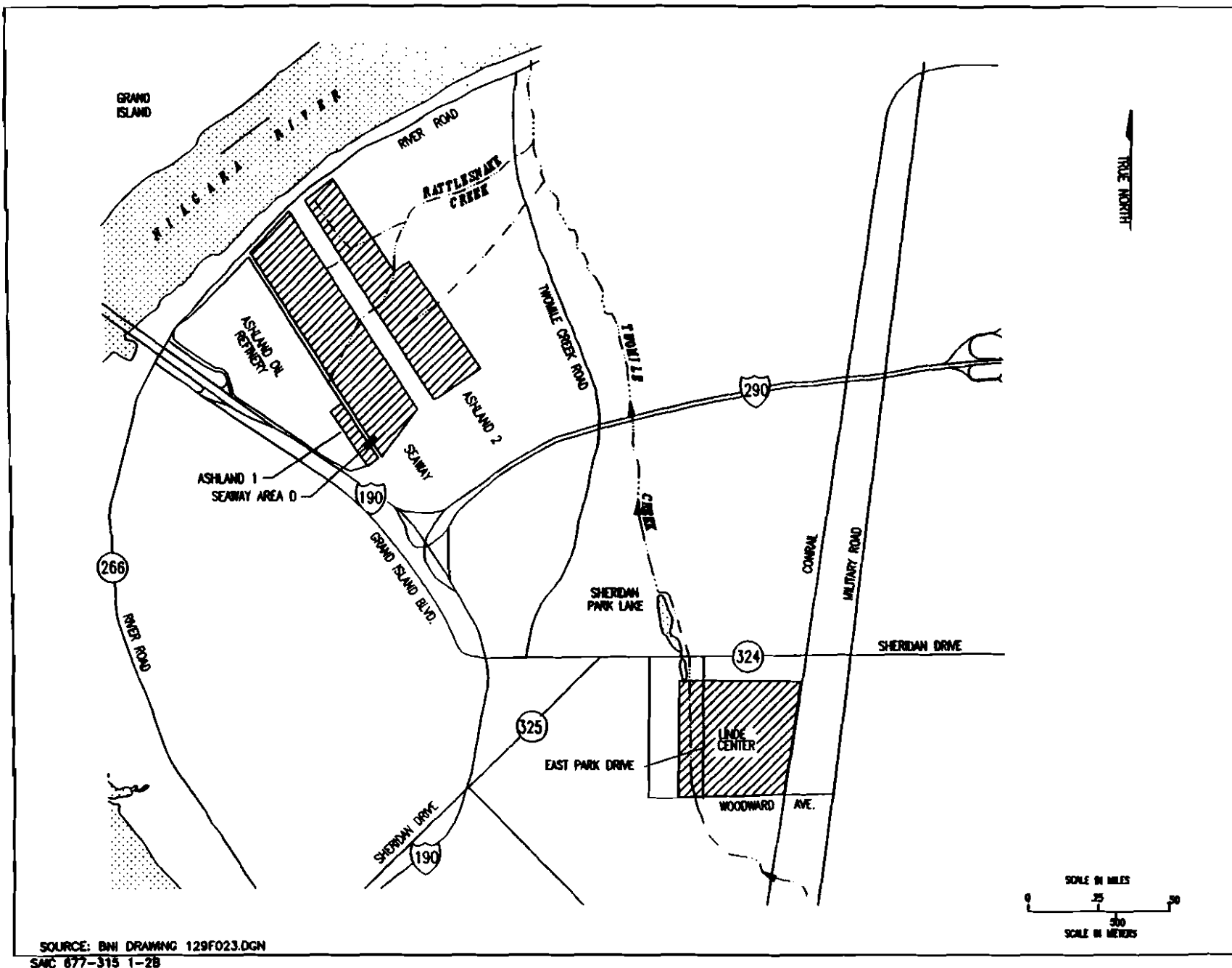


Figure 1-1. Location of the Town of Tonawanda, New York and the Ashland Sites



**FIGURE 1-2 LOCATIONS OF ASHLAND 1 (INCLUDING SEAWAY AREA D),
 ASHLAND 2, LINDE CENTER AND SEAWAY INDUSTRIAL PARK**

The advancing and retreating glaciers deposited till, a nonsorted, unstratified mixture ranging in size from clay to boulders, and coarse-grained sandy outwash/ice-contact deposits.

Relatively thick layers of silt and clay were deposited in the glacial lakes. The total thickness of glacial deposits in the Tonawanda area ranges from 55 to 95 ft (BNI 1993).

1.2 Surface Water

Surface water from the Ashland sites drains via Rattlesnake Creek and Twomile Creek to the Niagara River. The 37-mile long river connects Lake Erie to Lake Ontario and is divided into its upper and lower reaches by Niagara Falls. At Strawberry and Grand Islands, the river divides into two channels, the Chippawa Channel and the Tonawanda Channel, located west and east of Grand Island, respectively. The Ashland 1 and 2 and the Seaway properties are located along the upper reach of the river, adjacent to the Tonawanda Channel. The Tonawanda Channel is approximately 1,600 ft wide and 25 ft deep as it passes by the Town of Tonawanda. Runoff from the Linde property flows to Twomile Creek and does not impact the Ashland sites.

Drainage from Ashland 1 travels under the Seaway property through an underground concrete conduit and exits at the Niagara Mohawk property line (See Figure 1-3). Rattlesnake Creek receives this drainage, crosses the Niagara Mohawk property, and then crosses the Ashland 2 property. The creek is approximately 10 ft wide and 3 ft deep at bank-full capacity, and has a 1% slope on the Ashland 2 property. The creek and the adjacent low-lying areas are vegetated with a thick growth of cattails and rushes, which limit flow velocities. The low-lying area is approximately 100 ft wide on Ashland 2. Three small drainage ditches join Rattlesnake Creek after it crosses Ashland 2. The creek then travels approximately 3,200 ft before its confluence with Twomile Creek (BNI 1993).

The Ashland 1 topography is flat except where berms were created to surround storage tanks previously located on the property. The portion of the Ashland 1 property southeast of the bermed area is flat and covered with grass except for the dirt access road and electrical substation area. Drainage from this area is directed toward the ditch running along the east boundary, between Ashland 1 and Seaway. An approximately 3-acre area is enclosed by the berms that surrounded the storage tanks formerly located on the site. The berms are approximately 7 ft high at their highest point. Water from precipitation collects within the bermed area and infiltrates into the soil, evaporates, or flows to the east drainage ditch through small pipes that extend through the berm and under the access road to the ditch.

The Seaway property consists of a long, narrow, rectangular landfill pile with side slopes of approximately 30% (BNI 1993). The ridge of the pile is at the center of the property, resulting in half the surface runoff flowing southwest toward the Ashland 1 property and half flowing northeast onto Ashland 2.

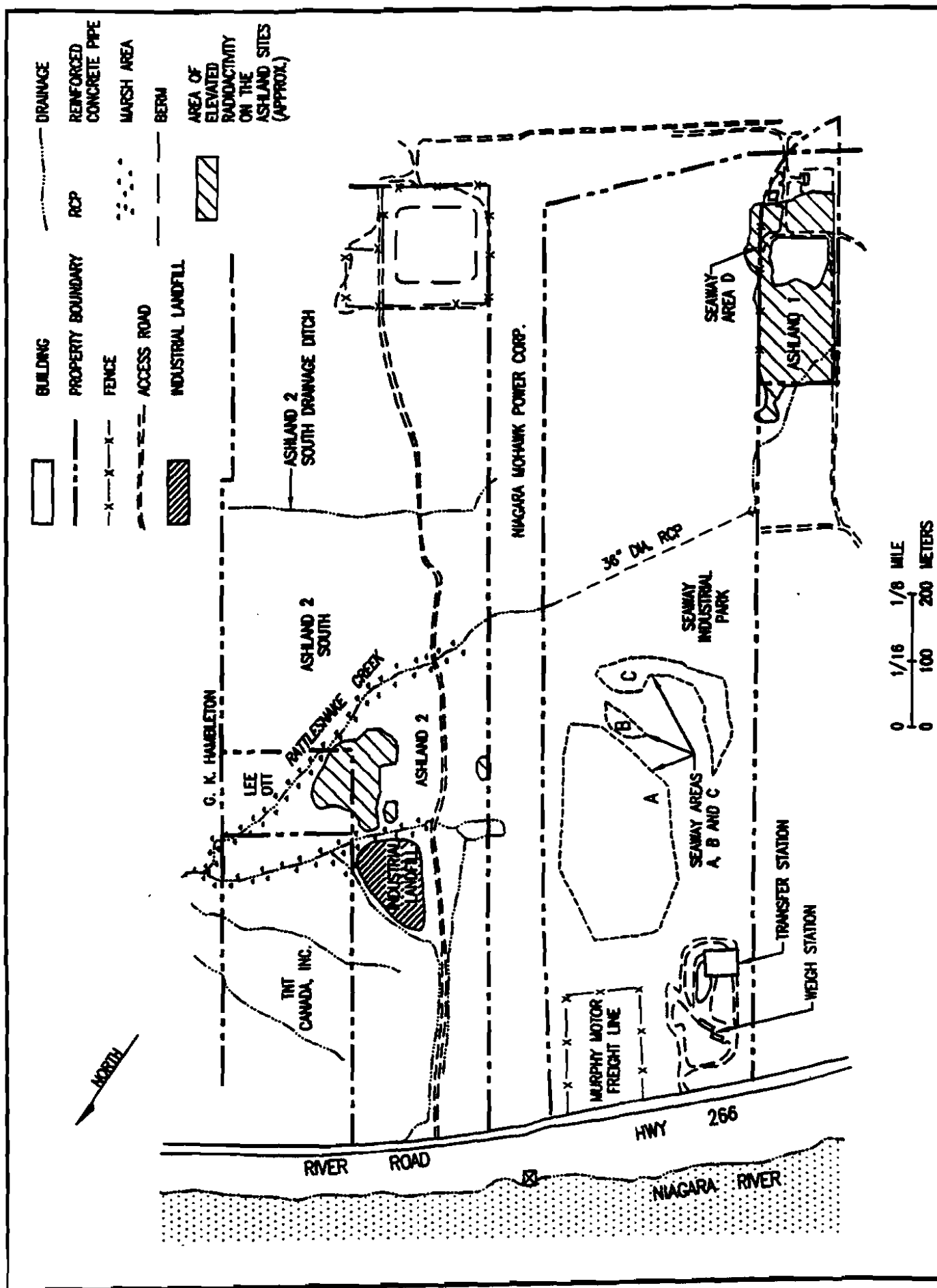


FIGURE 1-3
LOCATION DETAILS - ASHLAND 1, ASHLAND 2 AND SEAWAY PROPERTIES

Storm runoff leaves the Ashland 2 property by five drainage channels. The southeastern portion of the property drains to a small 3-ft wide ditch running northeast toward Twomile Creek. The ditch carries surface drainage from nearly 40% of the total property area (BNI 1993). It travels under Twomile Creek Road through a 30-inch (in) culvert and empties into Twomile Creek approximately 20 ft below the Fletcher Street bridge over Twomile Creek (BNI 1993).

Rattlesnake Creek is the main channel that drains Ashland 2. Approximately 60% of the property's overland runoff empties into Rattlesnake Creek (BNI 1993). The Ashland 1 drainage, which is carried under Seaway and exits Seaway at the Niagara Mohawk property, makes up part of the Rattlesnake Creek flow. A second channel, which drains the western portion of the property, joins Rattlesnake Creek just across the adjacent TNT Canada, Inc. property line. Runoff from Seaway is collected in this channel. Two other ditches draining the northern and southern sides of the property's access road flow into this ditch before it empties into Rattlesnake Creek.

1.3 Groundwater

As described in the Remedial Investigation (RI) (BNI 1993), the geologic column at the Ashland sites includes four major stratigraphic units. The uppermost layer is till (sandy and gravelly clay), which is 20 to 40 ft deep with a veneer of fill material, 1 to 4 ft thick, except under waste piles. Below the till layer is about 25 to 65 ft of varved lacustrine clay and glaciolacustrine clay. The bedrock is about 200 ft thick and consists of shales of the Salina Group.

Ground surface infiltration varies in the different areas of the Ashland sites. The infiltration rate is 0.9 in/ yr at Ashland 1 and Ashland 2, and 7.3 in/yr at Seaway. Because of the low permeability [1×10^{-6} centimeters/second (cm/s)] of the glacial till and clays, very little infiltrating water percolates to the shallow groundwater; therefore, little contaminant transport is possible.

Most of the infiltrating water moves horizontally through the relatively higher conductivity top layer (1×10^{-3} cm/s) forming the perched groundwater system. This perched flow is the major subsurface transport mechanism. The perched water system is recharged locally and discharges into drainage ditches and creeks. For Seaway, the average velocity of perched water flow is estimated to be about 1,049 ft/yr. At Ashland 1 and Ashland 2, the flow velocities are estimated to be 26 ft/yr and 131 ft/yr, respectively.

A semi-confined shallow system occurs principally in sand lenses under the Ashland sites. This shallow system is considered to be semi-confined because it is surrounded by silty-clay material that has lower hydraulic conductivity (less than 10^{-7} cm/s). The sand lenses are approximately 16 to 40 ft below the ground surface. There is enough recharge (deep percolation) into the system from precipitation to cause a response; the response, however, is rather damped. A conservative estimate of recharge is 0.024 ft/yr with an average linear velocity of 0.3 ft/yr. Depth to the shallow system water table ranges from 0 ft (near wetlands) to 20 ft at the Ashland sites.

The shallow groundwater system likely discharges to Rattlesnake Creek downstream of the Ashland sites, the flow being primarily through a series of hydraulically interconnected sand lenses. Contaminant leachates are not likely to reach the shallow groundwater; therefore, this is not likely to be a migration pathway (BNI 1993).

1.4 Land Use

The Ashland sites are located in the Town of Tonawanda. The Town of Tonawanda is bound by the City of Tonawanda to the north, Amherst to the east, Buffalo to the south, and the Niagara River to the west.

The Ashland sites are located in an industrial setting. Old refineries, a truck terminal, and other heavy industries are located in the area. Ashland 1 is located behind a vacant refinery now being utilized as a petroleum distribution center. This property is highly visible from Interstate 190. The Seaway property is a landfill that received refuse until September 1993. It was closed under the New York State Department of Environmental Conservation (NYSDEC) regulations in 1995 and is currently in post closure status including monitoring and operation of a landfill gas flare system installed as part of the closure plan (Erk 1998). The property is a large mound covered in grass, and is highly visible from Interstate 190. The Ashland 2 property is vacant and contains small trees and brush. Although not maintained, the property is not visually obtrusive.

The Town of Tonawanda has adopted a zoning ordinance that regulates land uses. The ordinance provides three residential zoning districts, two commercial districts, and an industrial district. The Town of Tonawanda also has two other districts designated as performance standards and waterfront. The Ashland 1, Ashland 2 and Seaway properties are located in an area zoned as a Waterfront Industrial District.

The Ashland sites are located in the industrial area of the Town of Tonawanda. The border along the City of Tonawanda is approximately one-half mile from these properties. This border marks the only residential area near these properties that is accessible by River Road. In an area west of River Road, fronting the Niagara River, are Isle View Park, vacant land, industrial pipeheads, a wharf, and the Riverwalk bikeway trail. The Riverwalk is a hike-and-bike path along the Niagara River that will eventually link downtown Buffalo with the Barge Canal in the City of Tonawanda. Several major sections have been completed, including the stretch in the Town of Tonawanda. East of River Road are the Ashland sites, vacant land, tank farms, a landfill, and truck terminals. Isle View Park includes a boat ramp, picnic tables, and fishing areas.

The waterfront area of the Town of Tonawanda is being considered for major redevelopment. Development plans are being discussed for the area around Ashland 1, Seaway, and Ashland 2. A major component of these development plans is the relocation of River Road. A portion of the road

would be located east of its present location and would run through the front portions of the Seaway and Ashland 2 properties.

A *Waterfront Region Master Plan* (Master Plan) addresses revitalization of the Town of Tonawanda waterfront area. The Master Plan defines a planning region, sets goals and objectives, outlines a plan for future development, and recommends strategies for plan implementation in phases. Several issues are identified for resolution in meeting desired goals and objectives, including "remediation of inactive hazardous waste sites and reuse of the land for recreational and economic development uses which improve the quality of life" (Ernst and Young 1992). The Master Plan information was utilized in evaluating remedial alternatives for the Ashland sites, and the selected alternative will allow development consistent with the Master Plan.

2. SITE HISTORY

2.1 History of the Linde Property

From 1942 to 1946, Linde Center was contracted by MED to separate uranium from pitchblende uranium ore and domestic ore concentrates. These processing activities resulted in elevated levels of radionuclides in portions of the property and buildings. Subsequent disposal and relocation of processing wastes from Linde resulted in elevated levels of radionuclides at three nearby properties in the Town of Tonawanda: the Ashland 1 property, the Seaway property, and the Ashland 2 property.

The history of the Ashland 1, Seaway, and Ashland 2 properties is summarized below. (Refer to Figure 1-3 for locations.)

2.2 History of the Ashland 1, Seaway, and Ashland 2 Properties

In 1943, when commercial operations began at the Linde property, efforts were also underway to identify a disposal site for waste residues produced during uranium processing at the Linde property. In 1943, MED leased a 10-acre tract known as the Haist property, now called Ashland 1, to serve as a disposal site for the uranium ore processing residues. In 1944, MED purchased the Haist property. Residues were deposited at Ashland 1 from 1944 to 1946 and consisted primarily of low-grade uranium ore tailings. Records indicate that approximately 8,000 tons of residues were spread over roughly two-thirds of the property. In 1960, after environmental testing indicated the site met standards at the time for release, the property was transferred to the Ashland Oil Company, a Division of Ashland Petroleum, Inc. (Ashland Oil Company), and has been used as part of this company's oil refinery activities since that time.

In 1974, Ashland Oil Company constructed a bermed area for two petroleum product storage tanks and a drainage ditch on the Ashland 1 property. The majority of the soil removed during construction of the bermed area and drainage ditch was transported by Ashland Oil Company to Seaway and Ashland 2 for disposal. The storage tanks were removed by Ashland Oil Company in 1989.

A portion of the Ashland 2 property was used by Ashland Oil Company as a landfill for disposal of general plant refuse and industrial and chemical by-products. From 1974 to 1982, Ashland Oil Company transported an unknown quantity of soil mixed with radioactive residues from Ashland 1 to an area east of the Ashland 2 industrial landfill. The industrial landfill portion of Ashland 2 was closed and covered with clayey soil in 1982 by Ashland Oil Company. Currently, the Ashland 2 property is vacant and is covered by grass, bushes, and weeds; no commercial operations are currently being conducted.

The Seaway Industrial Park is owned by the Sands Mobile Park Corporation and was operated by Browning Ferris Industries (BFI) as a landfill. Seaway Industrial Park has been used as a landfill for the past 50 to 60 years. Refuse was received at the landfill until 1993 and the landfill was closed in 1995. The residues excavated by Ashland Oil Company from Ashland 1 during storage tank construction activities were deposited on four areas at Seaway. These four areas are identified as areas A, B, C and D on the Seaway property in Figure 1-3. Portions of the residues were later buried under refuse and fill material.

As described in more detail in the RI for the Tonawanda Site (BNI 1993), uranium (U)-238, radium (Ra)-226, and thorium (Th)-230 were selected as the indicator radionuclides for radiological contamination present in the uranium ore processing wastes that originated at Linde while uranium ore processing was conducted under a MED contract.

These indicator radionuclides, along with historical records and information on the inorganic constituents (e.g., copper, lead, vanadium), also present in the MED wastes, were used to track the MED-related wastes from Linde to Ashland 1, Ashland 2 and Seaway. The results of investigations of these properties confirmed the presence of MED-related contamination on portions of the Ashland sites.

The investigations and observations also show the presence of wastes on these properties that are not MED-related, including wastes and oils from refinery operations, industrial dumping and landfilling. These properties have not been characterized for the presence of hazardous substances in other areas which are the responsibility of other parties. The plan proposed for remediation of the Ashland sites addresses cleanup of the radioactive hazardous substances present on these properties as a result of MED-related activities at Ashland 1 as well as non-radiological hazardous substances that may be comingled with radiologically contaminated material.

As described in Sections 5 and 6 of this ROD, no organic substances were found to be associated with MED-related waste, and the inorganics that may be associated with the MED wastes were not found at levels that present risks. Remediation, if required, of hazardous substances that may be present on these properties that are not MED-related are not the subject of response actions under the Formerly Utilized Sites Remedial Action Program (FUSRAP) by the United States Army Corps of Engineers (USACE) and are not included in the plan for remediation of the Ashland sites.

3. HIGHLIGHTS OF COMMUNITY PARTICIPATION

Public input was encouraged to ensure that the remedy selected for the Ashland sites meets the needs of the local community in addition to being an effective solution to the problem. The administrative record file contains all of the documentation used to support the preferred alternative and is available at the following locations:

U.S. Army Corps of Engineers
Public Information Center
1776 Niagara Street
Buffalo, NY 14207-3199

Tonawanda Public Library
333 Main Street
Tonawanda, NY 14150

In addition, information repositories are set up at the following locations:

Kenmore Public Library
160 Delaware Avenue
Kenmore, NY 14217

Parkside Village Public Library
169 Sheridan-Parkside Drive
Town of Tonawanda, NY 13072

Grand Island Memorial Public Library
1715 Bedell Road
Grand Island, NY 14072

News media announcements and letters were also mailed out announcing the availability of draft documents to parties who had expressed an interest in the remediation of the Ashland sites.

The revised Proposed Plan (PP) for the Ashland sites was issued on November 10, 1997 (USACE 1997) and USACE granted a 30-day extension to the comment period. An additional 11 days was added to this extension after several members of the public requested additional time for preparing their comments. With the extension, the comment period totaled 71 days. Other extensions were considered; however, USACE determined that additional extensions were not appropriate.

A public meeting was held on December 17, 1997 to provide information about the remedial alternatives and the opportunity to submit comments on the revised PP. Responses to public comments on the revised PP are presented in the Responsiveness Summary, which is provided as

an appendix to this document. The Responsiveness Summary, combined with the Feasibility Study (FS) (DOE 1993b) and revised PP, will constitute the final FS and PP for the Ashland sites.

4. SCOPE OF REMEDIAL ACTION

In the preparation of the FS, sitewide remedial action objectives were established for the four properties that comprised the Tonawanda Site. Preliminary remediation goals were adopted for cleanup of radiologically and chemically contaminated media. General response actions for contaminated media were identified and preliminary alternatives addressing cleanup of remedial units were described, with estimated quantities of contaminated media. These descriptions, which formed the basis for the subsequent more detailed evaluation of alternatives, are summarized in Sections 4.1 through 4.4.

In 1997, a site-specific cleanup guideline for radiological contamination at the Ashland sites was developed. This cleanup guideline is described in Section 4.5.

4.1 Remedial Action Objectives Adopted in the FS

4.1.1 Soils and Sediments

For contaminated soils on the Ashland sites, the FS identifies potential routes and scenarios for human exposure to soil contaminants and quantifies the remedial objective for soils in terms of excess cancer risk and a non-carcinogenic hazard index. Under the National Contingency Plan (NCP), which establishes U.S. Environmental Protection Agency (USEPA) regulations for compliance with the Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA), acceptable exposure levels for known or suspected carcinogens are those that represent an excess lifetime cancer risk to an individual of between a few in 10,000 to 1 in 1,000,000 (10^{-4} to 10^{-6}). The FS adopts this objective for remediation of contaminated soils at the Ashland sites.

Potential adverse health effects other than cancer are evaluated as the ratio of the daily intake of a contaminant over the reference dose (RfD) or reference concentration (RfC) for inhalation exposure. USEPA has established RfDs and RfCs for noncarcinogenic contaminants. The ratio of the daily intake to the RfD or RfC is referred to as the hazard quotient (HQ) for individual contaminants. The summation of the HQs for exposures to individual contaminants that may be present at a site is referred to as the hazard index (HI). When the HI exceeds unity (1.0), there may be a concern for adverse health effects. The FS adopts the objective of limiting the HI to 1.0 or less for human exposure to noncarcinogenic contaminants that may be present in soils at the Ashland sites.

For contaminated soils, objectives are also identified that would prevent the transport of contaminants to surface water or surface water sediments in concentrations representing unacceptable environmental risks. For contaminated sediments, remediation objectives are adopted to protect environmental receptors.

The remedial objectives are also referenced to compliance with applicable or relevant and appropriate requirements (ARARs). The principal ARARs for the proposed cleanup of the Ashland properties are described in Section 10 of this ROD.

The principal preliminary remedial goal (PRG) identified in the FS for radiologically contaminated soils and sediments at the Ashland sites are the Department of Energy (DOE) generic guidelines for residual radionuclide contamination (DOE 5400.5) at FUSRAP and Surplus Facilities Management Program (SFMP) sites. These guidelines limit residual concentrations of Ra-226, Ra-228, Th-230 and Th-232 to:

- 5 picocuries/gram (pCi/g), averaged over the first 15 centimeters (cm) of soil below the surface; and
- 15 pCi/g, averaged over 15 cm thick layers of soil more than 15 cm below the surface.

These guidelines take into account ingrowth of Ra-226 from Th-230 and Ra-228 from Th-232, and assume secular equilibrium. If either the combination of Th-230 and Ra-226 or Th-232 and Ra-228 are present, not in secular equilibrium, the appropriate guideline is applied as a limit to the radionuclide with the higher concentration. If other mixtures of radionuclides occur, the concentrations of individual radionuclides are reduced so that (1) the dose for the mixtures will not exceed the basic dose limit; or (2) the sum of the ratios of the soil concentration of each radionuclide to the allowable limit for that radionuclide will not exceed unity (1) (Gilbert et al 1989).

A cleanup guideline for total uranium of 60 pCi/g is also cited in the FS as a remediation goal for the Tonawanda Site. Because uranium ores processed at Linde contained natural uranium, a guideline for U-238 can be calculated based on the percentage of the radioactivity U-238 contributes to the activity of natural uranium (i.e., 47.3 percent) and on the guideline value for uranium (60 pCi/g). For example, a soil sample is considered "contaminated" with uranium or "exceeding the uranium guideline" if the uranium-238 concentration is 28.4 pCi/g or greater [i.e., 47.3 percent of the uranium guideline for Tonawanda soil (60 pCi/g)] above background (BNI 1993).

Subsequently, a site-specific radionuclide cleanup guideline was derived specifically for the Ashland sites (DOE 1997) pursuant to CERCLA, as amended, and the NCP. This guideline involves excavating soils exceeding 40 pCi/g of Th-230 and supersedes the previously defined guidelines. Applying this site-specific guideline to cleanup of the Ashland sites meets the allowable radiological dose limits for current and future use of the property. Additional details of the site-specific guideline are provided in Section 4.5.

4.1.2 Groundwater

Groundwater flow conditions at the Ashland sites are summarized in Section 1.3 of this ROD. As described in Section 1.3, hydrogeologic conditions at the Ashland sites are characterized as consisting of a perched groundwater system and a shallow, semi-confined groundwater system, overlying the deep aquifer. Based on these conditions, the RI and FS conclude that contaminants are not expected to migrate vertically through the low permeability formations characteristic of the subsurface at the Ashland sites.

Groundwater monitoring results confirm this conclusion and indicate that radioactive contaminants from the contaminated areas on the Ashland sites are not migrating to the deep or shallow groundwater systems. Slightly elevated concentrations of contaminants were detected in one monitoring well located in the perched system, but concentrations were below drinking water standards. Also noted in the RI and FS are findings concerning the background quality of the groundwater, which characteristically shows high levels of total dissolved solids, sulfates and chlorides and is considered nonpotable without extensive, costly treatment (BNI 1993).

Based on conclusions that contaminants are not expected to migrate vertically, as confirmed by sampling and the nonpotable nature of background groundwater quality, the FS concluded that no groundwater remediation is required.

4.1.3 Surface Water

Impacted surface water will be remediated through the elimination of the sources of contamination (the contaminated site soils and sediments).

4.2 Summary of General Response Actions Identified in the FS

General response actions developed in the FS to satisfy the remedial action objectives for soils and sediments are as follows:

Soils and Sediments

- | | |
|---------------------------|--------------|
| 1. No Action | 2. Removal |
| 3. Institutional Controls | 4. Treatment |
| 5. Containment | 6. Disposal |

4.3 Remedial Units Adopted in the FS for the Tonawanda Site

Remedial units were defined in the FS to allow flexibility in addressing remediation activities. Remediation activities were divided into specific elements, and alternatives were developed for each element. Four remedial units were identified at the Tonawanda Site; three for the soils and sediment, one for buildings and structures:

- accessible soils (on all properties);
- "access-restricted" soils (on Linde and Seaway properties);

- contaminated sediments (on all properties); and
- buildings/structures (on the Linde property).

For the Ashland sites, the remedial units identified were limited to soils and sediments since all soils are accessible and there are no buildings or structures at the Ashland sites.

As described in Section 4.1.2, remediation of groundwater is not required. Potential contamination of surface water would be addressed through actions taken to remove the sources of contamination, the contaminated soils and sediments. NYSDEC concurs that remediation is not necessary for groundwater and surface water at any of the Ashland sites (NYSDEC 1998).

4.4 Identification of Preliminary Remedial Alternatives

Preliminary remedial alternatives identified in the FS for soils and sediments at the Ashland sites are described below.

4.4.1 Soils

The contaminated soils identified as a result of previous investigative activities contain radionuclides and other inorganics (metals) that are potentially related to MED activities. The RI determined that the MED related inorganic contaminants appear to remain with the MED related radionuclide contaminants in the soils and sediments. The Baseline Risk Assessment (BRA) (DOE 1993a) found that the levels of inorganics that are associated with the MED wastes are not high enough to pose significant risks. For the Ashland sites, a preliminary remedial alternative identified by DOE included removal of all soils with radioactive contamination above the DOE generic guidelines (see Section 4.1). Treatment and disposal options were evaluated first and foremost on their effectiveness in protecting human health and the environment. The alternatives developed in the FS for soils include:

1. no action;
2. institutional controls;
3. containment;
4. removal followed by treatment and disposal options; and
5. removal followed by disposal options.

4.4.2 Sediments

Remedial alternatives available for sediment are similar to those for soils as described in Section 4.4.1. Excavation alternatives for Rattlesnake Creek and associated drainage ditches located at the Ashland sites consist of assembling options to divert surface water flow at specific locations along the creek to permit excavation of contaminated sediments, and grading the stream embankments at specific locations to reduce erosion and re-suspension of stream sediments. After excavation of

sediments at Rattlesnake Creek, sediment treatment and disposal options are identical to those developed for contaminated site soils.

4.5 Radionuclide Cleanup Guideline Derivation for Ashland 1, Ashland 2, and Seaway - 1997

In 1997, DOE developed a cleanup guideline for radionuclide contamination present on the Ashland sites. The cleanup guideline adopted for radionuclides in soils at the Ashland sites would require the excavation and disposal off-site of soils exceeding the site-specific derived guideline of 40 pCi/g Th-230. The analysis showed that by adopting this cleanup guideline, all CERCLA risk criteria and ARARs are satisfied (DOE 1997).

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5. SUMMARY OF SITE CHARACTERISTICS

This Section summarizes findings of the RI concerning contamination at the Ashland sites. The contaminants of concern (COCs) from the MED-related materials at the Ashland sites and the COCs selected for modeling exposure and risk are also identified.

For consistency with the data and analysis presented in detail in the RI, FS, and BRA, information on Linde site characteristics is also included where relevant to the characteristics of the Ashland sites.

5.1 Sources, Types, and Distribution of Contaminants

Portions of the Ashland sites are contaminated with radionuclides and metals that originated from uranium ore processing at Linde. In addition, other organic and inorganic contamination has been detected. The source of organic and some inorganic contamination is not considered MED-related (BNI 1993). This section discusses radiological and chemical contaminants separately.

Investigations and surveys prior to the RI, review of historical records and the findings of the RI have determined that hazardous radiologically contaminated substances are present in MED-related wastes on portions of the Ashland sites. The investigations and observations reported in the RI also determined the presence of wastes that are not MED-related on the Ashland sites, including wastes and oils from refinery operations, industrial dumping and landfilling. The data reported in the RI includes information on areas of the Ashland sites that indicates no MED-related wastes are present. Those areas were not characterized to determine the presence of hazardous substances that may require action by other parties.

5.1.1 Radiological Contaminants

Radiological contaminants known or suspected to be present at the Ashland sites resulted from uranium ore processing operations conducted at Linde. Radionuclides from the U-238, U-235, and Th-232 decay chains have been identified in the RI (BNI 1993).

5.1.2 Chemical Contaminants

Chemical contamination, as referred to in this ROD, includes both inorganic and organic substances that are not radioactive hazardous substances.

Chemical contamination sources are described in the RI report (BNI 1993). The chemical contaminants include inorganic constituents present in the filter cake, effluents, fly ash and slag associated with the uranium ore extraction process. Numerous organic chemicals were detected at the Tonawanda Site, including polycyclic aromatic hydrocarbons (PAHs), volatile organic compounds (VOCs), and other semi-volatile organic compounds (SVOCs).

Organic contamination and potentially some inorganic contamination is not attributed to MED-related activities (BNI 1993). However, in the BRA, all chemical contaminants detected at the Ashland sites are evaluated as potential COCs regardless of whether they are within the definition of FUSRAP wastes (DOE 1993a).

5.2 Nature and Extent of Contamination at the Ashland Sites

In the RI, the radiological data were compared to DOE's generic guideline for residual contamination in soils and to the total uranium guideline of 60 pCi/g that was established for the Tonawanda Site. Soil samples exceeding either the generic guideline or the total uranium guideline are referred to as contaminated or as exceeding guidelines.

As detailed in Section 4.1 of this ROD, DOE's generic guidelines for residual contamination in soils limit the concentration of Ra-226, Ra-228, Th-232 and Th-230, to 5 pCi/g in the first 15 cm of surface soil and 15 pCi/g in soils more than 15 cm below the surface.

The total uranium guideline of 60 pCi/g was used to calculate a soil guideline value of 28.4 pCi/g for U-238. (See Section 4.1 of this ROD.)

Sediment and soil are the primary media containing MED-related radioactive materials and metals contamination at the Ashland sites. Contamination detected at the Ashland sites is described in the following sections. (Refer to Figure 1-3 for locations.)

5.2.1 Radioactive Contamination in Soil and Sediment at Ashland 1 (Including Seaway Area D)

U-238, Ra-226, and Th-230 and their respective radioactive decay products are the primary radionuclides of concern at Ashland 1. Th-230 is found throughout Ashland 1 and the vicinity at levels ranging from 0.6 to 4400 pCi/g. Elevated levels of Th-230 were detected mainly in the southern portion of the property and along the northern property line. U-238 contamination appears in the southern and western portions of the property with either Th-230 or Ra-226 or both. U-238 contamination results range from 0.9 to 1500 pCi/g. Depth of U-238 contamination varied. Ra-226 contamination, found less frequently than U-238 or Th-230, is present on the southern and western portions of Ashland 1. Ra-226 concentrations range from 0.6 to 750 pCi/g.

5.2.2 Radioactive Contamination of Soil and Sediment at Ashland 2

Th-230, U-238, and Ra-226 and their respective radioactive decay products are the primary radionuclides of concern at Ashland 2. Th-230 was detected throughout the contaminated areas and along the drainage creeks of Ashland 2 at levels that exceed DOE guidelines. For the most part, Th-230 was detected from surface levels to a depth of 6 ft at concentrations ranging from 0.1 to 2200 pCi/g. U-238 was detected mainly in the center of the large contaminated area along with

Th-230 and/or Ra-226. U-238 was detected in concentrations ranging from 1.3 to 263 pCi/g primarily between the surface and 3 ft. Ra-226 contamination is present mainly in the center of the large contaminated area but occurs less frequently than Th-230 or U-238. Ra-226 typically appears in the same area and at the same depth as U-238 contamination. Ra-226 concentrations ranged from 0.7 to 189 pCi/g.

5.2.3 Chemical Contamination of Soils at the Ashland Sites

VOCs and base/neutral and acid extractables (BNAEs) not associated with MED activities are present in a number of locations at Ashland 1 and Ashland 2 in the surface, subsurface, and undisturbed soils.

Concentrations of lead and vanadium (MED filter cake constituents) at Ashland 1 and Ashland 2 range from scarcely to substantially above background levels. Background levels were established using results of analyses of soils located in the southern portion of Ashland 2 as presented in the RI (BNI 1993). Lead was detected at a maximum concentration of 7,500 parts per million (ppm) compared with a background concentration of 36.7 ppm; vanadium at a maximum of 2,290 ppm with a background of 25.6 ppm. These maximum concentrations were all detected on Ashland 1. The maximum concentrations of these metals were lower on Ashland 2, but were still at least 10 times the background concentrations. Metals related to MED processing activities remain with the MED-related radionuclides in the contaminated soil and would, therefore, be removed as the radionuclide contaminated soils are addressed in remedial activities at the site.

5.2.4 Surface Water

The primary surface water systems at Ashland 1, Seaway, and Ashland 2 are the drainage ditch from Ashland 1 that forms the headwaters of Rattlesnake Creek, the drainage system on the southern portion of Ashland 2, and the drainage ditches that serve a portion of the Seaway landfill.

U-238, Th-230, and Ra-226 and their respective radioactive decay products are the primary MED-related radionuclides of concern in surface water due to transport of suspended soils and sediments. Surface water downstream of Ashland 1 and Seaway and onsite at Ashland 2, appears to be influenced by radioactively contaminated soils and sediments. The concentrations of radionuclides immediately downstream of Ashland 2 return to background levels.

5.2.5 Groundwater

Deep Aquifer

No contamination has been detected in the deep aquifer at the Ashland and Seaway properties. The thick layer of low permeable clay overlying the bedrock precludes migration of contaminants into the deep aquifer (BNI 1993).

Shallow Semi-confined System

The silty sand lenses of this groundwater system are isolated by the surrounding thick lake clay section. Contaminant concentrations measured during investigation activities are at or near measured background concentrations, indicating the isolation of this system from surface water infiltration (BNI 1993).

Perched Groundwater System

A thin layer of fill overlies the thick clay deposit at the Ashland and Seaway properties. Groundwater in this zone tends to flow laterally to discharge points in local surface water bodies. Only slightly elevated concentrations of radioactive contaminants were detected in samples collected in this zone; however, the concentrations were below appropriate DOE guidelines (BNI 1993).

5.3 Radiological Data Evaluation

The goal of the data evaluation was to identify a set of radiological COCs that are likely site-related and then select those COCs that are valid to use in the quantitative risk characterization.

Radiological sample analyses for the RI were performed by Thermo Analytical/Eberline, (TMA/E) in accordance with approved protocols. The detailed analytical results are contained in appendices to the RI report (BNI 1993). Data quality objectives and Quality Assurance/Quality Control (QA/QC) procedures are discussed in Appendix D of the RI (BNI 1993).

5.3.1 Rationale and Criteria for Selection of Radiological COCs

Samples from the following media were evaluated for potential radiological COCs: surface and subsurface soils; groundwater; surface water; and sediment from the drainage ditches.

Mean contaminant concentrations were determined using detected results or the value of the quantitation limit, when results were reported as less than that value. Ubiquitous, naturally occurring radionuclides such as potassium (K)-40 were not considered in the BRA (DOE 1993a).

Radionuclides were selected as potential COCs if the mean detected concentrations exceeded twice the arithmetic mean background concentration for that radionuclide in a specific medium. For completeness, all radionuclides in the decay series of a given potential radiological COC were considered in the risk assessment.

5.3.2 Background Levels of Radionuclides

Background samples for each medium were used to identify naturally-occurring levels of radionuclides not affected by onsite sources. Radiological data were compared to arithmetic mean

background levels to select the subset of radiological COCs appropriate for quantitative risk assessment, as described in the BRA (DOE 1993a).

5.3.3 Summary of Radiological COCs

The final list of radiological COCs for soil includes Ra-226, Th-230, U-238 and their associated decay products. Th-230, Th-232, Ra-226, and U-238 were identified as radiological COCs in surface water. Th-230 and U-238 were identified as radiological COCs in sediment. Although not considered MED-related, the Th-232 and U-235 series were included in the risk assessment.

5.4 Potential Chemical COCs

The chemical data evaluated are those reported in the RI report for the Tonawanda Site (BNI 1993). The chemical data are organized according to property and medium. Surface soil data were available for the Ashland 1 and Ashland 2 operable properties. There were no chemical data available for Seaway. As a former municipal landfill, Seaway is likely to contain a wide variety of chemical contaminants. Isolation of FUSRAP-derived chemical contamination is not practicable. The uncertainty associated with this data gap is discussed in Section 5 of the BRA (DOE 1993a).

The groundwater in the area is drawn from the Camillus Shale. Because of the high levels of total dissolved solids, sulfates and chlorides, the water from this formation is considered nonpotable without extensive, costly treatment (BNI 1993). Therefore, the groundwater was not evaluated due to the lack of a complete exposure pathway.

Chemicals in the RI database were evaluated in accordance with USEPA data validation guidance in *Risk Assessment Guidance for Superfund, Volume I* (USEPA 1989a). Background samples for soil were used to identify naturally-occurring levels of chemicals and ambient concentrations.

As summarized in Section 6 of this ROD and detailed in the BRA, risks resulting from nonradioactive chemical constituents were found to be within the USEPA acceptable risk range. Therefore, there are no chemical COCs for human health concerns. COCs for ecological receptors are discussed in Section 6.3

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6. SUMMARY OF SITE RISKS

6.1 Human Health Risk Factors

The BRA was prepared to evaluate the risk to human health and the environment from the radioactive and chemical contaminants at the site. In accordance with USEPA guidance, the primary health risks investigated were cancer and other chemical-related illnesses. The assessment evaluated the potential risks that could develop in the absence of cleanup and assumes that no institutional controls (e.g., fencing, maintenance, protective clothing, etc.) are or will be in place. The purpose of the BRA was to determine the need for cleanup and provide a baseline against which the remedial action alternatives were compared. The complete report is in the administrative record file and a brief summary is provided here.

6.1.1 Cancer Risk

The predominant health concern associated with the radioactive contaminants at the Ashland sites is the induction of cancer. The radiological health risks presented in the BRA are limited to this concern. This approach is consistent with USEPA guidance, which notes that, generally, the risk of cancer is limiting and may be used as the sole basis for assessing the radiation-related human health risks for a site contaminated with radionuclides (USEPA 1989a).

The risk to an individual resulting from exposure to chemical carcinogens is expressed as the increased probability of a cancer occurring over the course of a lifetime. To calculate the excess cancer risk, the estimated daily intake, averaged over a lifetime, is multiplied by a chemical-specific slope factor (SF). The SF converts estimated daily intakes averaged over a lifetime of exposure directly to the incremental risk of an individual developing cancer (USEPA 1989a). The carcinogenic risk estimate is generally an upper-bound estimate because the SF is often an upper 95 percentile confidence limit of the probability of response based on experimental animal data (USEPA 1989a). Thus, the USEPA is reasonably confident that the "true risk" will not exceed the risk estimate derived through use of the SF and is likely to be less than that predicted. (USEPA 1989a).

6.1.2 Non-Cancer Risks

The non-cancer HQ assumes that there is a level of exposure (the RfD or RfC, as appropriate) below which it is unlikely for even sensitive populations to experience adverse noncarcinogenic health effects (USEPA 1989a). If the intake exceeds this threshold (i.e., intake/RfD or intake/RfC exceeds unity or 1), there may be concern for potential noncarcinogenic effects (USEPA 1989a). The greater the ratio (intake/RfD or RfC), the greater the level of concern (USEPA 1989a). The HQs for each chemical addressed in the intake and exposure pathway are summed to obtain the HI, which allows assessment of the overall potential for noncarcinogenic effects (USEPA 1989a). When the HI exceeds unity (1), there may be concern for potential adverse health effects.

6.2 Human Health Risk Estimates for the Ashland Sites

For clarity of presentation, the risk estimates resulting from potential radiological and chemical exposures are presented separately in the following sections. Exposure estimates are presented for each exposure scenario for the most probable exposure conditions (mean receptor) and the reasonable maximum exposure conditions (RME receptor).

6.2.1 Radiological Risk Estimates

The radiological risks for the Ashland sites are presented in shaded maps for all scenarios and receptors in the BRA (DOE 1993a). Potential risks as a result of exposure to contaminants found at the Ashland sites were estimated for current and future uses. Radiological risk estimates are discussed in Section 6.2.1.1 for current use and in Section 6.2.1.2 for future use.

The potential receptors and routes of exposure to contamination at the Ashland sites are summarized in the BRA (DOE 1993a). Exposure point concentrations and doses are also presented in the BRA. The estimates of radiological risk consider exposure to contaminated soil, sediment, and indoor and outdoor air.

Contaminated soil and sediment have been identified in various areas at the Ashland sites, as indicated by the characterization and environmental monitoring results. Air is considered a pathway for exposure because of the potential for transport of airborne radioactive particulates from contaminated soil, radon gas from radium contaminated soil, and external gamma irradiation from contaminated soil.

6.2.1.1 Current Use Scenarios

Risk estimates for potential exposure from current site use are presented in Table 6-1. The estimated radiological risks for the mean and RME exposures are within the USEPA target risk range (10^{-4} to 10^{-6}) for current uses of the Ashland sites.

6.2.1.2 Future Use Scenarios

Risk estimates for potential exposure from future property use (commercial/industrial) are also presented in Table 6-1. RME and mean risks at the Former Tank Area in Ashland 1, and the RME risks at the Rattlesnake Creek area in Ashland 2, exceed the USEPA target risk range. Dominant exposure pathway risks in the future use scenarios are similar to those in the current use scenarios in that direct gamma irradiation contributes the bulk of the risk to the receptors. The risks to the children wading in the local creek would be expected to remain constant.

Table 6-1. Summary of Total Radiological Risks for the Ashland Sites

Location	Areas*	Employee		Transient	
		mean	RME	mean	RME
Current Land Use Scenarios					
Ashland 1	Other areas			1×10^{-7}	8×10^{-6}
	Former tank area			1×10^{-6}	1×10^{-4}
Ashland 2	Rattlesnake Creek area			4×10^{-7}	6×10^{-5}
	South portion			5×10^{-9}	5×10^{-6}
Local Creek	Twomile Creek			2×10^{-7} **	9×10^{-7} **
Future Land Use Scenarios					
Ashland 1	Other areas	7×10^{-6}	9×10^{-5}		
	Former tank area	7×10^{-4}	1×10^{-2}		
Ashland 2	Rattlesnake Creek area	4×10^{-5}	5×10^{-4}		
	South portion	4×10^{-7}	2×10^{-5}		
Local Creek	Twomile Creek			2×10^{-7} **	9×10^{-7} **

RME reasonable maximum exposure

NP no pathway

* See the BRA, Section 3, for maps delineating areas.

** Child wading in local creek

Shaded areas/bold numbers exceed the USEPA target risk range

NOTE: All numbers rounded to one significant figure.

6.2.2 Chemical Risk and Hazard Index Estimates

Estimates of risk to site receptors resulting from exposure to chemical carcinogens are presented in Table 6-2, expressed as the increased probability of a cancer occurring over the course of a lifetime. Estimates are presented for both the mean and RME conditions. For both present and future use scenarios, the risk is within acceptable USEPA risk values. Chemical-specific intakes and carcinogenic risks are tabulated in Appendix C of the BRA.

Table 6-2 includes the risk associated with organic compounds not associated with MED activities and inorganic compounds which may not be associated with MED waste. These contaminants are not MED-related, but were included in the risk assessment. The BRA concludes that isolation of MED-related chemical contamination from non MED-related chemical contamination was not practicable in the risk assessment and includes a discussion of the uncertainty this introduces into the assessment. As previously stated, the chemical risks estimated do not exceed USEPA risk thresholds notwithstanding inclusion of the non MED-related contaminants. These findings should not be interpreted to mean that hazardous substances that may be the responsibility of other parties do not exist at levels requiring action by others in areas of the Ashland sites outside of areas determined to be contaminated by MED-related wastes.

The potential for adverse noncarcinogenic health effects is expressed as chemical-specific HQs, which are tabulated in Appendix C of the BRA (DOE 1993a). The HQs were tabulated for all COCs where reference doses are currently available. (Since HIs were all less than 1, the HIs are not tabulated in this document.)

6.3 Ecological Risks

The Ecological Risk Assessment for the Tonawanda BRA follows USEPA's general procedures for ecological assessments under CERCLA (USEPA 1989b). The characterization of habitats and biota at risk are semiquantitative, and screening of COCs and assessment of potential impacts to biota are based on measured environmental concentrations of the constituents and toxicological effects reported in literature.

The Ashland sites are located in an industrial area. Ashland 1, and Seaway provide minimal urban wildlife habitat supporting only cosmopolitan species of birds and small mammals such as crows, gulls, and rats. Ashland 2 supports a more diverse animal community because it contains a mosaic of vegetated habitat types including wetlands hydrologically connected to Rattlesnake and Twomile Creeks and the Niagara River.

Table 6-2. Summary of Chemical Risks for Ashland Sites - Carcinogens*

Location	Employee		Transient	
	mean	RME	mean	RME
Current Land Use Scenarios				
<u>Ashland 1</u>				
Soil ingestion			2×10^{-7}	3×10^{-6}
Particulate inhalation			2×10^{-12}	3×10^{-10}
<u>Ashland 2</u>				
Soil ingestion			2×10^{-7}	2×10^{-6}
Particulate inhalation			1×10^{-10}	1×10^{-8}
<u>Local Creek</u>				
Surface water ingestion			4×10^{-7}	8×10^{-7}
Sediment ingestion			8×10^{-8}	2×10^{-7}
Future Land Use Scenarios				
<u>Ashland 1</u>				
Soil ingestion	3×10^{-7}	4×10^{-6}		
Particulate inhalation	1×10^{-10}	2×10^{-9}		
<u>Ashland 2</u>				
Soil ingestion	4×10^{-7}	4×10^{-6}		
Particulate inhalation	5×10^{-9}	1×10^{-7}		
<u>Local Creek</u>				
Surface water ingestion				
Sediment ingestion				

RME = reasonable maximum exposure

* No areas exceed the USEPA target risk range

Based on published aquatic and oral toxicity data and their mobility and persistence properties, 33 ecological COCs were identified: 3 radionuclides, 21 metals, 7 VOCs and 2 SVOCs. The heavy metals, especially copper, lead, selenium, silver, vanadium, and zinc in Tonawanda properties' soils and surface waters were the greatest source of ecological risk to terrestrial and aquatic populations' exposure by ingestion of soils and direct contact with surface waters. Although no threatened or endangered species were identified, in the absence of remediation, both onsite and offsite organisms and populations at Tonawanda properties will continue to be at risk, particularly at Ashland 2, where wildlife and natural habitats are more extensive.

6.4 Baseline Risk Summary

According to the NCP, acceptable exposure levels for known or suspected carcinogens are generally those that represent an excess upper bound lifetime cancer risk to an individual of between 10^{-6} and 10^{-4} . The BRA determined risks from radiological and chemical exposures if contaminated material was left onsite. For the Ashland sites, human receptors (transients and future employees) could receive radiological doses. For current use scenarios at the Ashland sites, radiological and chemical risks are within acceptable ranges.

Future employees at Ashland 1 and Ashland 2 may be exposed to mean radiological risks of 4×10^{-7} to 7×10^{-4} and RME risks of 2×10^{-5} to 1×10^{-2} . For current and future use, the mean radiological risk to a child wading in the creek is 2×10^{-7} and the RME risk is 9×10^{-7} . Potential noncarcinogenic health effects show hazard indices of less than 1 where 1 or greater is unacceptable. Metals, especially copper, lead, selenium, silver, vanadium, and zinc in soils and surface waters were the greatest sources of ecological risk by ingestion of soils and direct contact with surface waters.

6.5 Uncertainties Related to Risk Estimates

Uncertainties attributable to the numerous assumptions incorporated in the risk estimations are inherent in each step of the risk assessment process. A key factor affecting the exact identification of COCs for the Tonawanda Site is associated with the limitations imposed by the available database. Limited toxicity data available for chemical contaminants prevented the calculation risk for several potential chemical COCs. In addition, the potential COCs identified for the BRA might include chemicals that contribute to overall site risk, but are not necessarily attributable to MED activities.

Because of the inherent uncertainties in the risk assessment process, the results of the human health assessment presented in the BRA should not be taken to represent absolute risk. Rather, estimated risks should be considered to represent the most important source of potential risk at the site, which, once identified, might be evaluated in more detail and remedied appropriately during the remedial action process.

In general, the risk assessment calculations presented are conservative estimates, and tend to result in calculated risks that are greater than actual site risks.

7. DESCRIPTION OF REMEDIAL ALTERNATIVES

As detailed in the FS, remedial action alternatives for the Tonawanda Site were screened to identify those that are most suitable for implementation.

Subsequent to the FS, a site-specific radionuclide cleanup guideline was developed for the Ashland sites. An additional remedial alternative reflecting this site-specific guideline for these properties was identified and evaluated. This alternative is described in Section 7.2.

7.1 Summary of Alternatives Addressed in the FS

Detailed descriptions of the remedial alternatives can be found in the FS which is available in the administrative record file. A total of six alternatives were considered in the FS for their effectiveness in remediating the Tonawanda Site. These alternatives are summarized below:

Alternative 1: No Action. The no-action alternative is required under CERCLA regulations to provide a baseline for comparison with other alternatives. Under this alternative, no action is taken to implement remedial activities. Periodic monitoring of the COC concentrations in appropriate media is continued.

Alternative 2: Complete Excavation with Offsite Disposal. Complete excavation of MED-contaminated soils containing radionuclides above guidelines (generic guidelines) and offsite disposal would remove the source of elevated levels of radionuclides from the site. Removal of material containing radionuclides above guidelines in or near wetland areas would be performed during the dry season to minimize the need for dikes and berms.

Alternative 3: Complete Excavation with Onsite Disposal. Similar to Alternative 2 regarding excavation of soils, however, all excavated soils would be placed in an on-site disposal cell. Institutional controls would be imposed to control access to the onsite engineered disposal cell and the cell would be designed to minimize future exposures or releases to the environment.

Alternative 4: Partial Excavation with Offsite Disposal. For the Ashland sites, all impacted soils are accessible, thus making this alternative the same as Alternative 2.

Alternative 5: Partial Excavation with Onsite Disposal. For the Ashland sites, all impacted soils are accessible, thus making this alternative the same as Alternative 3.

Alternative 6: Containment with Institutional Controls. Containment would involve capping all accessible soils. Removal of any material containing radionuclides above guidelines (generic guidelines) from wetland areas would be performed during the dry season to minimize the need for dikes and berms. This alternative would protect human health and the environment by eliminating exposure pathways. Institutional controls would be required to prevent future access to and disturbance of the contained waste. Applicable standards regarding residual levels of radionuclides would not be met. Therefore, restrictions would be required on the future use of areas of these

properties, or alternate concentrations would have to be justified for contaminated soils left in place.

Alternatives 2 through 5 require disposal of large quantities of contaminated soil. As part of the analysis of those alternatives, seven disposal options were evaluated in the FS. Since that time, two alternatives have been eliminated from consideration (DOE-owned facilities in the eastern United States and the western United States). The five remaining disposal options that were evaluated in the FS are:

Onsite disposal in an engineered waste containment structure. The contaminated materials would be excavated and disposed in a waste containment structure located at the Ashland sites. The structure would have a clay liner that prevents migration of water into the structure and minimizes potential buildup of water within the structure. Infiltration of surface water into the structure would be minimized with an impermeable cap consisting of four feet of clay, three feet of protective rip-rap, sand, and topsoil layers. Other material may be used to implement the performance objectives of the structure as determined appropriate during final engineering design.

Offsite disposal in an in-state land waste containment structure. This option involves disposal of the waste materials at a facility within the State of New York. The design requirements for a waste containment structure offsite would be similar to that for an onsite option. Because this facility does not now exist, the use of such an option may only be plausible for long range remedial actions. For the purpose of the 1993 FS/PP (DOE 1993c), it was assumed that DOE would develop a separate disposal facility dedicated to the New York FUSRAP waste.

Offsite disposal at an existing federal facility. This option would be similar to the previous disposal option. The effectiveness and implementability of each federal facility was evaluated in the FS/PP.

Offsite disposal at an appropriately licensed disposal facility. Under this option, the contaminated materials would be excavated and transported offsite to an appropriately licensed disposal facility for permanent disposal.

Offsite beneficial reuse. The potential for the reuse of Tonawanda waste was also evaluated. Potential beneficial reuse options include using soil as cover in radioactive waste facilities; fill material for airport expansion projects, fill material for roadbeds, or similar construction sites.

7.2 Additional Alternative for the Ashland Sites

Subsequent to the FS, a site-specific radionuclide cleanup guideline was developed pursuant to CERCLA, as amended, and the NCP for the Ashland sites. As described in Section 4.5 of this ROD, soils exceeding the site-specific derived guideline of 40 pCi/g of Th-230 would be excavated and shipped offsite for appropriately licensed or permitted disposal.

The additional alternative is referred to as Alternative 2A: Complete Excavation With Off-Site Disposal (using site-specific guidelines). This alternative is the same as Alternative 2, except the guideline used was developed specifically for the Ashland sites, versus the generic guidelines used in Alternative 2.

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8. SUMMARY OF COMPARATIVE ANALYSIS OF ALTERNATIVES

The alternatives described in Section 7 were evaluated using CERCLA criteria to determine the most favorable actions for cleanup of the Ashland sites. These criteria are described below. The criteria were established to ensure that the remedy is protective of human health and the environment, meets regulatory requirements, is cost effective, and utilizes permanent solutions and treatment to the maximum extent practicable. The results of the detailed evaluation of alternatives to remediate the Ashland sites are summarized in the following sections. The evaluation criteria are described in Section 8.1, followed by a summary of the comparative analysis in Section 8.2.

8.1 Evaluation Criteria

The following two criteria are threshold criteria and must be met.

- *Overall Protection of Human Health and the Environment* - addresses whether an alternative provides adequate protection and describes how risks are eliminated, reduced, or controlled through treatment, engineering controls, or institutional controls.
- *Compliance with Federal and State Environmental Regulations* - addresses if a remedy would meet all of the federal and state ARARs.

The following criteria are considered balancing criteria and are used to weigh major tradeoffs among alternatives being evaluated.

- *Long-Term Effectiveness and Permanence* - addresses the remaining risk and the ability of an alternative to protect human health and the environment over time, once cleanup goals have been met.
- *Short-Term Effectiveness and Environmental Impacts* - addresses the impacts to the community and site workers during cleanup including the amount of time it takes to complete the action.
- *Reduction in Toxicity, Mobility, or Volume Through Treatment* - addresses the anticipated performance of treatment that permanently and significantly reduces toxicity, mobility, or volume of waste.
- *Implementability* - addresses the technical and administrative feasibility of an alternative, including the availability of materials and services required for cleanup.
- *Cost* - compares the differences in cost, including capital, operation, and maintenance costs.

The following are considered modifying criteria and are generally taken into account after public comment is received on the PP.

- *State Acceptance* - evaluates whether the State agrees with, opposes, or has no comment on the preferred alternative.
- *Community Acceptance* - addresses the issues and concerns the public may have regarding each of the alternatives as expressed in comments to USACE.

8.2 Alternative Comparison

The advantages and disadvantages of the alternatives were compared, based on the evaluation criteria. The results of the comparison, summarized below, were used to select a preferred alternative. The FS Alternatives 4 and 5 are not included since they are the same as Alternatives 2 and 3, respectively, for the Ashland sites.

Overall Protection of Human Health and the Environment. The alternatives providing complete excavation of soils containing radionuclides above guidelines (generic and site-specific), specifically Alternatives 2, 2A, and 3, provide the greatest degree of protection to human health and the environment, including the ecological system, because the materials containing radionuclides above guidelines are removed from the site and permanently isolated in a disposal facility. A degree of risk to workers is involved with implementing these alternatives, as well as the other remedial action alternatives, because the associated work involves intrusive activities for handling and moving materials containing radionuclides above guidelines at the Ashland sites. These risks can be minimized by using safety procedures and equipment. Alternative 6 provides protection by reducing or eliminating certain exposure pathways. It relies on institutional controls to provide protection of human health and the environment. Alternative 1 provides no increased protection over the current site conditions and will not be protective of human health and the environment over the long-term for foreseeable land uses.

Compliance with ARARs. The FS describes ARARs determined by DOE for Alternatives 1, 2, 3, 4, 5, and 6. Refer to the FS for details. USACE has assessed ARARs for the proposed remediation (Alternative 2A, which is not addressed in the FS) of the Ashland sites. USACE's ARAR assessment of Alternative 2A is presented in Section 10.2 of this ROD. Alternatives 2, 2A and 3 meet ARARs because all soils containing radionuclides exceeding the guidelines (generic and site-specific) would be excavated and permanently isolated in a disposal facility. The other alternatives, all of which involve leaving some soil containing radionuclides above guidelines in place, would not comply with restrictions on residual concentrations in soils. Alternative 1 is noncompliant with ARARs because all waste containing radionuclides above guidelines remains onsite with no additional protection provided.

Long-Term Effectiveness and Permanence. A primary measure of the long-term effectiveness of an alternative is the magnitude of residual risk to human health after remediation. The adequacy and reliability of engineering and/or institutional controls used to manage residual materials that remain onsite must also be considered.

Alternatives 2, 2A, and 3 have the highest degree of long-term effectiveness and permanence because all soils containing radionuclides above generic guidelines, or the site-specific guideline, are excavated and removed from the site, or placed in an engineered disposal cell.

Alternative 6, containment, has a high degree of effectiveness, but relies on long-term management to ensure that exposure pathways remain blocked. The magnitude of residual risk and exposures to human health and the environment is directly related to the adequacy and reliability of the clay cap and institutional controls.

For Alternatives 2, 2A, 3, and 6, risk calculated for a worker involved in maintenance activities at any disposal cell or capped areas for a period of 25 years is similar to the general public's health risk during remediation and is within acceptable levels.

Alternative 1, no action, has low long-term effectiveness because the post-implementation remedial risks equal those now at the site.

Short-term Effectiveness and Environmental Impacts. Short-term effectiveness is measured with respect to protection of community and workers as well as short-term environmental impacts during remedial actions and time until remedial action objectives are achieved. An increase in the complexity of an alternative typically results in a decrease in short-term effectiveness because of increased handling and processing. Also, alternatives involving off-site disposal of wastes would result in a decrease in short-term effectiveness because of the increased time required and transportation-related risks.

Alternative 1, no action, is the most effective in protecting the community and workers and controlling impacts during implementation since no actions that could create impacts are undertaken. Alternative 1 requires the shortest time to implement. The short-term effectiveness of the other alternatives rank in the following order: Alternative 6 (containment), Alternative 3 (complete excavation and on-site disposal), Alternative 2A (complete excavation and offsite disposal using site-specific guideline), and Alternative 2 (complete excavation and offsite disposal using generic guidelines.)

Reduction in Toxicity, Mobility, or Volume through Treatment. None of the alternatives provides treatment onsite for the materials to be removed. Alternatives 2, 2A and 4, which provide for some degree of offsite disposal, will include containment at the final disposal location and any treatment which is required to meet the standards of the offsite facility. These alternatives thus will achieve reduction in mobility, although no treatment is planned which will reduce the toxicity or volume of the disposed materials. The remaining alternatives would provide either no removal of materials, or disposal onsite, which would also limit mobility through design of the disposal facility. The FS evaluated currently available treatment technologies for treatment in the course of removal and found none are economically and technologically feasible at this time. Thus, the preferred alternative achieves the best possible result in regard to these criteria.

Implementability. In regards to implementability, the alternatives were evaluated with respect to the following:

1. ability to construct and operate the technology;
2. reliability of the technology;
3. ease of undertaking additional remedial actions;
4. ability to monitor effectiveness;
5. ability to obtain approvals and coordinate with regulatory agencies;
6. availability of offsite disposal services and capacity; and
7. availability of necessary equipment and specialists.

The degree of difficulty in implementing an alternative increases with the complexity of the remediation activity. The design, engineering, and administrative requirements of Alternative 1, no action, are essentially negligible. The remaining alternatives are all technically and administratively feasible. The engineering, design, and administrative requirements increase with the complexity of the alternatives in the following order: Alternative 6, containment with institutional controls; Alternative 2A, complete excavation and offsite disposal (using site-specific guideline); Alternative 2, complete excavation and offsite disposal; and Alternative 3, complete excavation and onsite disposal. Materials and services for the various alternatives are readily available. The degree of difficulty in implementing these alternatives increases with the amount and type of soils to excavated, the level of permitting required to construct new disposal facilities, and the distance to the selected disposal facility. Alternatives 3 and 6, which involve onsite waste disposal, pose significant administrative difficulties.

Cost. The comparative analysis of costs compares the differences in capital, operations and maintenance (O&M), and present worth values. Costs for each of the alternatives presented in the original plan have been provided in detail in Appendix G of the FS. These costs were for the entire Tonawanda Site, not just the Ashland sites. Since the completion of the original PP, the costing methodology has changed, primarily in the area of assessing program management costs. Additionally, a more detailed analysis of volumes of soils containing radionuclides above generic and site-specific guidelines has been conducted using three-dimensional modeling. These new estimates, based on 1997 dollars, have been made for the Ashland sites only and have been included in the Administrative Record. Table 8-1 presents the current cost estimates for the alternatives.

Table 8-1 Implementation Costs for the Ashland Sites

Alternative	Description	Cost (in 1997\$)
1	No Action	\$7,000,000
2	Complete Excavation and Offsite Disposal (Generic Guideline)	\$72,000,000
2A	Complete Excavation and Offsite Disposal (using site-specific guideline of 40 pCi/g Th-230)	\$38,000,000
3	Complete Excavation with Onsite Disposal (Generic Guideline)	\$46,000,000
6	Containment with Institutional Controls	\$26,000,000

State Acceptance. The USACE has received a letter from NYSDEC indicating concurrence with the proposed remedy (NYSDEC 1998). This letter is included in Appendix A.

Community Acceptance. A PP for the Tonawanda Site was issued in November 1993 for public comment which described the DOE's preferred alternative for cleaning up elevated levels of radionuclides at the Tonawanda Site. Numerous concerns and comments were raised by the community and their representatives regarding the preferred alternative in that PP and the on-site disposal of any remedial action waste.

DOE listened to those concerns and had numerous interactions with the community's representatives in Congress (Congressman LaFalce and his staff), representatives locally [Coalition Against Nuclear Materials in Tonawanda (CANiT) and their consultants], and the NYSDEC over the past year. When FUSRAP was transferred to USACE, Lieutenant Colonel Michael Conrad, Commander of the Buffalo District, met with all key stakeholders for the Ashland sites. Three representatives from For a Clean Tonawanda Site (F.A.C.T.S.) were included in this meeting. Representatives of this group also submitted comments, both at the public meeting and in writing. The concerns of the community, as stated in the comments to USACE, have been considered in the decision regarding the remedy selection, and the responses are included in the Responsiveness Summary.

USACE considered the input of the community, including opposition to onsite disposal, as expressed in comments on the 1993 PP in developing and issuing the revised PP for the Ashland sites (SAIC 1998).

The revised PP was issued on November 10, 1997 and USACE granted a 30-day extension to the comment period. An additional 11 days was added to this extension after several members of the public requested additional time for preparing their comments. With the extension, the comment period totaled 71 days.

A number of comments were received on the revised PP for the Ashland sites and are addressed in the Responsiveness Summary included herein. After fully considering and addressing each comment, USACE has determined that the selected alternative is the most appropriate remedy for

the Ashland sites. This alternative is fully protective of human health and the environment, complies with all ARARs, addresses community concerns, and is acceptable to the state.

9. THE SELECTED REMEDY

The alternative selected for remediation of Ashland sites is Alternative 2A, Complete Excavation with Offsite Disposal (using site-specific guidelines). This alternative is protective of human health and the environment and complies with all ARARs.

It also provides the best balance among the considered alternatives with respect to the evaluation criteria and provides for the development of the Ashland sites consistent with the Master Plan. In addition, implementation of this remedy can be accomplished in compliance with all applicable laws relating to the protection of the public health and the environment. Specific components of the selected alternative are listed below:

- Excavate soils exceeding the site-specific derived guideline of 40 pCi/g Th-230 at the Ashland sites, as described in the document entitled "Radionuclide Cleanup Guideline Derivation for Ashland 1, Ashland 2, and Seaway".
- Ship offsite for appropriately licensed or permitted disposal all soils excavated that exceed the 40 pCi/g Th-230 guideline.
- Restore the sites with clean backfill from an off-site commercial source, and seed to restore vegetative cover at the sites to their original appearance or better.

Although not the least expensive alternative (no action, and containment were estimated to be lower cost alternatives), it is the least expensive of the options which are protective of human health and the environment, addresses community concerns and expectations, and allows for the development and future use of the remediated properties. Because this remedy meets all requirements, there is no justification to spend additional funds for more excavation.

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10. STATUTORY DETERMINATIONS

The selected remedy satisfies the statutory requirements of Section 121 of CERCLA as follows:

- the remedy must be protective of human health and the environment;
- the remedy must attain ARARs or define criteria for invoking a waiver;
- the remedy must be cost effective; and
- the remedy must use permanent solutions and alternative treatment technologies to the maximum extent practicable.

The manner in which the selected remedy satisfies each of these requirements is discussed in the following sections.

10.1 Protection of Human Health and Environment

Upon completion, the selected remedy for the Ashland sites will be fully protective of human health and the environment and meet CERCLA acceptable risk criteria. During remedial activities, institutional controls (e.g., access restrictions) and environmental monitoring and surveillance activities will be maintained to ensure protectiveness, so that no member of the public will receive radiation doses above guidelines from exposure to residual radioactive contaminants.

There are no short-term threats associated with the selected remedy that cannot be readily controlled and mitigated. In addition, no adverse cross-media impacts are expected from the remedy.

10.2 Attainment of ARARs

Agencies responsible for remedial actions under CERCLA must ensure that selected remedies meet ARARs.

Applicable requirements are those cleanup standards, standards of control, and other substantive environmental protection requirements, criteria, or limitations promulgated under federal environmental or state environmental or facility siting laws that specifically address a hazardous substance, pollutant, contaminant, remedial action, location or other circumstance at a CERCLA site. An applicable requirement directly and fully addresses an element of the remedial action.

Relevant and appropriate requirements are those cleanup standards, standards of control, and other substantive environmental protection requirements, criteria or limitations promulgated under federal environmental or state environmental or facility siting laws that while not "applicable" to a hazardous substance, pollutant, contaminant, remedial action, location or other circumstance at a CERCLA site, address problems or situations sufficiently similar to those encountered at the CERCLA site that their use is suited to the particular site.

Only those state standards that are promulgated, are identified by the state in a timely manner, and are more stringent than federal requirements may be applicable or relevant and appropriate.

To-Be-Considereds (TBCs) are non-promulgated advisories, criteria, or guidance issued by a federal or state government that may be useful in developing CERCLA remedies that are not legally binding and do not have the status of potential ARARs.

USACE has determined that the following statute and regulations are ARARs, as that term is defined in CERCLA, for the cleanup of the radionuclides present at the Ashland sites in Tonawanda, New York:

ARARs

Uranium Mill Tailings Radiation Control Act, (UMTRCA), 42 U.S.C. 7901 et. seq. requires the control of residual radioactive material at processing and disposal sites in a safe and environmentally sound manner. This requirement is considered relevant and appropriate to the remedial action at the Ashland sites. The selected remedial action will provide for the removal of radiological contaminants to a level that protects the public health and the environment and meets this requirement.

Subpart B of 40 CFR 192 sets standards for residual concentrations of Ra-226 in soil. It requires that radium concentrations shall not exceed background by more than 5 pCi/g in the top 15 cm of soil or 15 pCi/g in any 15 cm layer below the top layer, averaged over an area of 100 m². This requirement is considered relevant and appropriate to the Ashland sites remedial action. The selected remedial action at the Ashland sites will involve removal of soils exceeding the site-specific guideline of 40 pCi/g Th-230. Implementation of the proposed plan will result in radium concentrations below the stated limits.

Subpart D of 40 CFR 192 requires that releases of radon (Rn)-222 and Rn-220 into the atmosphere resulting from the management of uranium and thorium byproduct materials shall not exceed an average release rate of 20 pCi/m²-s. This requirement is considered relevant and appropriate to the remedial action at the Ashland sites. Implementation of the proposed plan will result in radon releases below the stated limits.

Subpart E of 10 CFR 20 provides standards for determining the extent to which lands must be remediated before decommissioning of a site can be considered complete and the license terminated. These standards are: unrestricted use - 25 mrem/yr total effective dose equivalent (TEDE) and as low as reasonably achievable (ALARA); restricted use with institutional controls - 25 mrem/yr TEDE and ALARA. These standards are considered relevant and appropriate to remediation of the Ashland sites. Implementation of the proposed plan will result in doses below the stated limits.

The selected remedy complies with the ARARs determined for the cleanup of the radionuclides present at the Ashland sites.

TBCs

USACE has determined that NYSDEC Technical Administrative Guidance Memorandum (TAGM) 4003 (NYSDEC 1993) is a TBC. It pertains to criteria for protection of the public from radionuclide materials that will remain on-site and is useful in developing the appropriate remedy for the site.

The guideline derivation process demonstrated that remediation to the cleanup criteria will meet the dose criterion of NYSDEC TAGM 4003 for the intended future use of the Ashland sites.

10.3 Cost Effectiveness

The selected remedy is the most cost-effective because it provides the best balance between the evaluation criteria. Cost-effectiveness is evaluated by comparing costs associated with the remedy versus a composite of the following balancing criteria: long-term effectiveness and permanence, short-term effectiveness, and implementability.

The selected remedy is effective because risks are reduced to acceptable levels. Increased short-term risks to workers, the public, and the environment may occur during implementation of the remedy, but these risks will be minimized by appropriate mitigative measures. Total cost in 1997 dollars for the selected alternative is estimated at \$38 million. In consideration of these factors, the selected remedy provides the best overall effectiveness of all alternatives evaluated relative to its cost.

10.4 Utilization of Permanent Solutions and Alternative Treatment Technologies or Resource Recovery Technologies to the Maximum Extent Practicable

The selected remedy for the Ashland sites provides a permanent solution to contamination that currently exists on these properties.

None of the practicable alternatives identified for the Ashland sites provides treatment onsite for the materials to be removed. Several alternatives provide for some degree of offsite disposal, including containment at the final disposal and treatment location which may be required to meet the standards of the offsite facility. These alternatives, thus, would achieve reduction in mobility, although no treatment is planned which will reduce the toxicity or volume of the disposed materials. The remaining alternatives would provide either no removal of materials, or disposal onsite, which would also limit mobility through design of the disposal facility. The FS evaluated currently available treatment technologies for treatment in the course of removal and found none are economically and technologically feasible at this time. Thus, the selected alternative achieves the best possible result in terms of satisfying the statutory preference for remedies that employ treatment that reduces toxicity, mobility, or volume as a principal element.

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APPENDIX A

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**New York State Department of Environmental Conservation
Division of Solid & Hazardous Materials
Bureau of Pesticides & Radiation
50 Wolf Road, Albany, New York 12233-7255
518-485-8981 FAX 518-485-8390**



April 13, 1998

VIA FAX & MAIL

Lieutenant Colonel Michael J. Conrad, Jr.
U.S. Army Engineering District, Buffalo District
1776 Niagara Street
Buffalo, New York 14207-3199

Dear Lieutenant Colonel Conrad:

**Re: Proposed Plan for the Ashland 1 and Ashland 2 Sites
(November 1997) (including Seaway Area D)**

The New York State Department of Environmental Conservation has completed its review of the United States Army Corps of Engineers' (USACE) "Proposed Plan for the Ashland 1 and Ashland 2 Sites (November 1997)." This letter transmits the results of that review and responds to your March 27, 1998 letter to me.

As you know, at the time the FUSRAP program was transferred to the USACE, we had been discussing with the United States Department of Energy (DOE) several questions regarding the impacts to groundwater from residual radioactive material at the Ashland sites. We had requested additional information in a July 10, 1997 letter to James Kopotic of the DOE, and your March 27, 1998 letter provided that additional information. Based on our review of your March 27, 1998 letter, we agree that it is unlikely that groundwater concentrations of radium, thorium, and uranium will approach or exceed Federal Drinking Water Standards due to residual radioactive material on the sites.

Based on the information presented in your March 27, 1998 letter and on our review of the DOE's final "Radionuclide Cleanup Guideline Derivation for Ashland 1, Ashland 2 and Seaway (September 1997)," this Department approves the USACE "Proposed Plan for the Ashland 1 and Ashland 2 Sites (November 1997)." This approval is based on the following conditions, described in the DOE's September 1997 document:

1. At least 15 centimeters (six inches) of clean topsoil will be placed over the remediated areas.

2. Approach 2 (as described in the DOE's September 1997 document) will be followed to implement the cleanup guideline of 40 pCi/g for thorium-230 (Th-230). Approach 2 involves removing all soils that contain Th-230 at or above that cleanup guideline, such that the site-wide Th-230 concentration after remediation will be significantly less than the target cleanup guideline (DOE estimated that the resulting Th-230 would be approximately 12 pCi/g). In apply this criterion, Th-230 concentrations must be averaged over an area not to exceed 100 square feet.

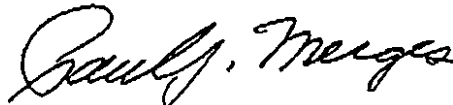
The source term presented in section 2.1.1.2 of DOE's September 1997 document was based on assumptions about the concentration and distribution of radionuclides other than Th-230 present at the sites. DOE used this source term to estimate the radiation doses presented in section 2.1.2. We also analyzed the potential doses due to that source term under a variety of land use scenarios. Based on those dose assessments, we conclude that if the DOE's assumptions about relative radionuclide concentrations prove to be a reasonable approximation to actual site conditions following remediation, plausible uses of the site after remediation are likely to result in doses less than ten millirems per year.

This Department will determine the adequacy of the remediation based on the concentrations of all residual radionuclides, not solely on whether the 40 pCi/g criterion for Th-230 has been met. The projected radiation doses from all residual radioactive material on site must total less than ten millirems per year under plausible, conservative land use scenarios in order to comply with the Department's Cleanup Guideline for Soils Contaminated with Radioactive Materials, *Division of Solid & Hazardous Materials Technical Administrative Guidance Memorandum 4003* ("TAGM 4003"). We agree that the most likely uses for the land are commercial or industrial. However, we believe that following the proposed remediation, the land will also be suitable for residential use. After remediation, we will perform dose assessments and pathway analyses to estimate potential radiation doses under several land use scenarios. If we find that the site is not suitable for residential use, deed restrictions should be place on the property to preclude such use.

We look forward to reviewing the work plan for this remediation.

If you have any questions or need further information, please contact John Mitchell of this Bureau at (518) 457-2225.

Sincerely,



Paul J. Merges, Ph.D.
Director, Bureau of Pesticides & Radiation
Division of Solid & Hazardous Materials

cc: P. Kranz, Erie County
K. Rimawi, NYSDOH
P. Tarnawskyj, BFI

APPENDIX B

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RECORD OF DECISION - APPENDIX B

Responsiveness Summary for the Proposed Plan for the Ashland 1 (Including Seaway Area D) and Ashland 2 Sites Tonawanda, New York

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List of Tables

Table 1. List of Commenters

Table 2. Ashland Sites Revised PP Comment Response Index

ACRONYMS AND ABBREVIATIONS

AEC	Atomic Energy Commission
ALARA	as low as reasonably achievable
ANL	Argonne National Laboratory
ARAR	applicable or relevant and appropriate requirement
BFI	Browning Ferris Industries
BNAE	base/neutral and acid extractable
BNI	Bechtel National, Inc.
BRA	Baseline Risk Assessment
CANiT	Coalition Against Nuclear Materials in Tonawanda
CERCLA	Comprehensive Environmental Response, Compensation, and Liability Act
CFR	Code of Federal Regulations
cm	centimeter
COC	contaminant of concern
cy	cubic yard(s)
DOE	Department of Energy
EIS	Environmental Impact Statement
EO	Executive Order
EQ	environmental quotient
F.A.C.T.S.	For A Clean Tonawanda Site
FBDU	Ford Bacon Davis Utah, Inc.
ft	foot/feet
FS	Feasibility Study
FUSRAP	Formerly Utilized Sites Remedial Action Program
FY	fiscal year
g	gram
HI	hazard index
HQ	hazard quotient
HTRW	hazardous, toxic, and radioactive waste
ICRP	International Commission on Radiological Protection and Measurements
IJC	International Joint Commission
in	inch
K	potassium
LLRWPA	Low Level Radioactive Waste Policy Act
LWV	League of Women Voters
MCL	maximum concentration level
MED	Manhattan Engineering District
mg	milligram
mrem	millirem
NCP	National Contingency Plan
NEPA	National Environmental Policy Act
NORM	naturally occurring radioactive material
NPL	National Priorities List
NRC	Nuclear Regulatory Commission
NYSDEC	New York State Department of Environmental Conservation
OEW	ordnance explosive waste
O&M	operations and maintenance
ORAU	Oak Ridge Associated Universities
OSHA	Occupational Safety and Health Administration
PAH	polycyclic aromatic hydrocarbon

Acronyms (continued)

PCB	polychlorinated biphenol
pCi	picocuries
P.L.	Public Law
PP	Proposed Plan
PRG	preliminary remedial goals
PRP	Potentially Responsible Party
QA/QC	quality assurance/quality control
Ra	radium
RAGS	Risk Assessment Guidance for Superfund
RfC	reference concentration
RfD	reference dose
RI	Remedial Investigation
RME	reasonable maximum exposure
ROD	Record of Decision
s	second
SARA	Superfund Amendments Reauthorization Act
SDMP	Sites Decommissioning Management Plan
SFMP	Surplus Facilities Management Program
SF	slope factor
SVOC	semi-volatile organic compound
TEDE	total effective dose equivalent
TAGM	Technical Administrative Guidance Memorandum
Th	thorium
TMA/E	Thermo Analytical/Eberline
U	uranium
UCL	upper concentration limit
UMTRCA	Uranium Mill Tailings Radiation Control Act
U.S.	United States
U.S.C.	United States Code
USACE	United States Army Corps of Engineers
USEPA	United States Environmental Protection Agency
VOC	volatile organic compound
yr	year(s)

1. INTRODUCTION

On November 10, 1997, Buffalo District, United States Army Corps of Engineers (USACE) issued a revised Proposed Plan (PP) for the proposed cleanup of the Ashland 1 (including Seaway Area D) and Ashland 2 sites (The Ashland sites) in Tonawanda, New York. A public meeting was held on December 17, 1997 during which the Corps presented background information and its recommended cleanup strategy for these sites. During the meeting, the public was invited to submit comments and written comments were accepted from November 10, 1997 to January 20, 1998. This Responsiveness Summary addresses the comments received from the public during the public meeting and comment period.

The preferred cleanup remedy for these sites is Alternative 2A, which is identified on page 10 of the revised PP. This alternative meets the commitments made to community representatives, is fully protective of human health and the environment, complies with all applicable or relevant and appropriate laws and regulations, and provides the best balance among the alternatives that were evaluated for these sites.

2. OVERVIEW OF PUBLIC INVOLVEMENT

Summary of Community Relations Activities for the Release of the Proposed Plan for Ashland Sites

The FY 1998 Energy and Water Appropriations Bill transferred administration and execution of the Formerly Utilized Sites Remedial Action Program (FUSRAP) to USACE from the U. S. Department of Energy (DOE). As part of this transfer, the Buffalo District became responsible for reviewing and issuing the PP which had been developed by the DOE. USACE identified concerns expressed by the community previously and after careful evaluation of the plan's ability to be responsive to the community's concerns, the PP was released on November 10, 1997.

Upon the release of the PP on November 10, 1997, a news release announcing the release of the plan for formal public comment was mailed to a total of 48 newspapers and radio stations in the Buffalo area. Legal advertisements announcing the release of the plan were placed in the Niagara Gazette (Thursday, November 13, 1997), The Buffalo News (Thursday, November 13, 1997), and the Tonawanda News (Thursday, November 13, 1997). A total of 210 copies of the plan were mailed to the stakeholders most impacted by the activities at the Ashland sites.

Newspaper advertisements announcing a USACE FUSRAP Public Information Center Open House scheduled for November 19, 1997, were placed in the Tonawanda News (Monday, November 17, 1997), Niagara Gazette (Sunday, November 16, 1997), Buffalo News (Sunday, November 9, 1997), and Ken-Ton Bee (Wednesday, November 12, 1997). These advertisements announced availability of the PP at the Open House.

An Open House was held at the FUSRAP Public Information Center at 70 Pearce Avenue in Tonawanda on November 19, 1997, from 4 - 7 p.m. Handouts available at the Open House were:

- The PP
- A Summary Fact Sheet on the PP,
- A form for submitting written comments,
- A flyer (reworked from the approved news release) announcing the scheduled public meeting

- A Risk Assessment Fact Sheet, and
- A USACE informational brochure.

A notice announcing the availability of the PP was placed in the Federal Register on November 26, 1997.

On December 5, 1997, an invitation to the public meeting scheduled for Dec. 17, encouraging attendance and comments, was sent to the entire Tonawanda mailing list of 729. A news release announcing the public meeting was sent out to a total of 48 newspaper and radio outlets. Newspaper advertisements announcing the public meeting were placed in the Niagara Gazette (December 14, 1997), Buffalo News (Sunday, December 14, 1997), and Tonawanda News (Tuesday, December 16, 1997).

The public meeting was held on December 17, 1997 from 7 p.m. to 9 p.m. at the Philip Sheridan Building, 3200 Elmwood Avenue in Tonawanda. The following handouts were available to the public at that meeting:

- A USACE Buffalo District Support for Others brochure,
- The PP,
- An Ashland 1 and Ashland 2 PP Summary Fact Sheet,
- An Ashland 1 and Ashland 2 Tonawanda, New York Fact Sheet,
- A Radiation in the Environment Fact Sheet,
- A Radiation at FUSRAP Sites Fact Sheet,
- A How Big is a Picocurie Fact Sheet,
- A Radioactivity in Common Products Fact Sheet,
- A Superfund Fact Sheet,
- A Radiation Fact Sheet,
- A Risk Assessment Fact Sheet,
- A comment sheet for comments on the PP,
- A timeline, and an
- Environmental Glossary.

One hundred and thirteen members of the public signed in at the meeting. A court reporter was available at the meeting to record comments. At the meeting, USACE explained the history of the site and the development of the proposed remediation alternative and answered questions on the plan. Thirteen formal comments were made at the meeting.

Comment period ending reminder cards were sent to the entire Tonawanda mailing list of 729 on January 2, 1998. Comment period extension cards were mailed to the entire Tonawanda mailing list of 729 on January 7, 1998.

The USACE FUSRAP Public Information Center was open throughout the comment period from 8 a.m. to 5 p.m., Monday through Thursday, and from 9 a.m. to noon on Friday.

The Administrative Record file was available throughout the comment period at the USACE FUSRAP Public Information Center, and the Tonawanda Public Library, 333 Main Street, Tonawanda, NY. Information Repositories were available at the FUSRAP Information Center; the Tonawanda Public

Library; the Kenmore Public Library, 160 Delaware Avenue, Kenmore, NY; the Parkside Village Public Library, 169 Sheridan-Parkside Drive, Town of Tonawanda, NY; and the Grand Island Memorial Public Library, 1715 Bedell Road, Grand Island, NY.

3. SCOPE AND ORGANIZATION OF THE RESPONSIVENESS SUMMARY

Sixteen sets of comments were received during the comment period, as well as comments received during the public hearing. An assessment was made of the comments received during the public hearing held in 1993 on the original PP to ensure that those comments relevant to the Ashland sites have been addressed by the revised PP or by this responsiveness summary (SAIC 1998). This assessment has been placed in the Administrative Record. Many of the comments received expressed similar questions and concerns.

To provide a more descriptive response to the comments received on the revised PP, the comments were grouped under 11 key subject areas and generic responses were prepared to cover each comment group. These subject areas with corresponding Generic Comment Response IDs include:

<u>Generic Comment Response ID</u>	<u>Comment Subject Area</u>
(A)	Support of PP
(B)	Approach to PP development
(C)	Residual contamination and exposure
(D)	Public involvement during decision making
(E)	Exposures, risks, and monitoring during remediation
(F)	Other sites, segmentation
(G)	Description of Proposed Remedy
(H)	Remedy does not consider recycling
(I)	Authority
(J)	Supporting documentation
(K)	Potentially Responsible Parties (PRPs)

Section 4 presents these generic responses. Section 5 presents a copy of the transcript from the hearing and copies of the comment documents. Each document is followed by responses to the comments contained in the specific comment document.

USACE encourages those interested in learning more about the Ashland sites or other FUSRAP projects to review the Administrative Record (which contains reports and other information), or call USACE's toll free number (1-800-833-6390) to ask questions or to be added to the mailing list for future mailings. The Administrative Record for the Ashland sites is available for public review at the following locations:

U.S. Army Corps of Engineers
Public Information Center
1776 Niagara Street
Buffalo, New York 14207-3199

Tonawanda Public Library
333 Main Street
Tonawanda, New York 14150

In addition, information repositories are set up at the following locations:

Kenmore Public Library
160 Delaware Avenue
Kenmore, New York 14217

Parkside Village Public Library
169 Sheridan-Parkside Drive
Town of Tonawanda, New York 13072

Grand Island Memorial Public Library
1715 Bedel Road
Grand Island, New York 14072

4. GENERIC COMMENTS AND GENERIC RESPONSES

The format used to address each key subject area consists of a set of composite questions representing the range of comments and the main concerns raised on a given issue. Each composite question is then followed by the USACE response. Table 1 provides a list of individuals or organizations submitting comments and Table 2 provides a comment response index including the date, a number for each comment, a brief description of the comment, and a letter designation(s) referring to the Generic Comment Response ID. USACE's responses to the comments are presented in Section 4.1 through 4.11.

The submitted comments have also been placed in the Administrative Record file for the Ashland sites. The Record of Decision (ROD), including this Responsiveness Summary, has also been placed in the Administrative Record file.

Table 1. List of Commenters

Commenter	No.	Representing	Date
Public Hearing Comments	1	Numerous	December 17, 1997
George M. Melrose	2	Town of Tonawanda	December 30, 1997
James M. Rauch	3	For a Clean Tonawanda Site (F.A.C.T.S.)	January 1, 1998
Gladys Gifford	4	Self	January 2, 1998
Lillian C. Detar	5	Self	January 6, 1998
James H. Kyles	6	Parsons Engineering Science, Inc.	January 8, 1998
James M. Rauch	7	F.A.C.T.S.	January 8, 1998
Norman H. Nosenchuck	8	New York State Department of Environmental Conservation (NYSDEC)	January 9, 1998
Gary H. Bauer	9	Self	January 9, 1998
Francis C. Amendola	10	F.A.C.T.S.	January 12, 1998
Leonore (Lee) S. Lambert	11	League of Women Voters (LWV)	January 12, 1998
Harold R. Roberts	12	International Uranium Corp.	January 16, 1998
Shannon D. Work	13	Spokane Tribe of Indians	January 16, 1998
Arlene & Gerald Poltowicz	14	Themselves	January 20, 1998
Leonore (Lee) S. Lambert	15	LWV	January 20, 1998
James M. Rauch	16	F.A.C.T.S.	January 20, 1998
Leonore (Lee) S. Lambert	17	LWV	January 20, 1998

Table 2. Ashland Sites Revised PP Comment Response Index

Date	Commenter/ Comment No.	Comment from	Description	Comment/ Response ID
12/17/97	1	Comments during hearing		
"	1.1	Taylor	Supports permanent solution	A
"	1.2	Swanick	Supports PP	A
"	1.3	Tobe		
"	1.3.1	"	Cleanup to NYSDEC 10 millirem guideline	B
"	1.3.2	"	All excavated material should be sent off-site	G
"	1.3.3	"	No exposure "credit" for cover fill	C
"	1.3.4	"	Backfill with clean fill	C
"	1.4	"	Request for grant to review health and safety issues	E
"	1.5	"	Training for local emergency response teams	G
"	1.6	Calabrese		
"	1.6.1	"	Support for PP	A
"	1.6.2	"	Sites not zoned for farming, ignore unrealistic cleanup goals	B
"	1.7	Sinclair	Supports CANiTs position	A
"	1.8	Rauch		
"	1.8.1	"	Increase in "Background" levels after remediation	B
"	1.8.2	"	NRC regulations should be used	B
"	1.8.3	"	PP created without public involvement	D
"	1.9	Hennessey	Supports PP	A
"	1.10	Krieger	Contact with international Waterways Commission	I
"	1.11	Dole	Monitoring during remediation	E
"	1.12	Lee	Opposes cleanup, waste of money	B
"	1.13	Schafer		
"	1.13.1	"	Is Linde site higher in elevation than Ashland sites	F
	1.13.2	"	Two-mile creek and Niagara river impacts	F

Table 2. Ashland Sites Revised PP Comment Response Index

Date	Commenter/ Comment No.	Comment from	Description	Comment/ Response ID
"	1.13.3	"	Impact of not cleaning up Linde on remediated Ashland sites	F
"	1.14	Finch	Cleanup standard is not sufficient	B
"	1.15	Watson	Cleanup standard is not sufficient, use 5 pCi/g due to radon issues	B
"	1.16	"	Segmentation seaway	F
12/30/97	2	Town of Tonawanda		
"	2.1	"	Support of proposed remedy	A
"	2.2	"	Compliance with NYSDEC TAGM 4003 and DOE Order 5400.5	B
"	2.3	"	Use of clean backfill, define clean backfill	C
"	2.4	"	Describe institutional controls to be used (fences, signs, etc.)	G
"	2.5	"	Future use restrictions	C
"	2.6	"	Residual contamination monitoring	C
"	2.7	"	Describe USACE oversight during remediation	G
"	2.8	"	Post-closure monitoring	C
"	2.9	"	Estimated dates of completion of Ashland 1 and 2 remediation	G
"	2.10	"	Have sufficient funds been appropriated to complete remediation	G
"	2.11	"	Can temporary remediation infrastructure be left for future site development	G
"	2.12	"	Schedule for addressing remaining sites	F
1/1/98	3	F.A.C.T.S.		
"	3.1	"	Extension of review time	D
"	3.2	"	Request for supporting documents	J
"	3.3	"	Potentially Responsible Parties	K
"	4	Gifford		
"	4.1	"	Support PP	A
"	4.2	"	Is rail transport available	G
"	4.3	"	Inform public of transportation risks	E
"	4.4	"	Ashland 2 wetlands	G
"	4.5	"	Investigation of Two-Mile Creek	F

Table 2. Ashland Sites Revised PP Comment Response Index

Date	Commenter/ Comment No.	Comment from	Description	Comment/ Response ID
"	4.6	"	Assessment of residual contamination after remediation, ecological risks	C
"	4.7	"	SARA Right-To-Know during remediation	G
1/6/98	5	Detar	Support PP	A
1/8/98	6	Parsons		
"	6.1	"	Support PP	A
"	6.2	"	Use local contractor for remediation	G
1/8/98	7	F.A.C.T.S		
"	7.1	"	Flawed process	I
"	7.2	"	Lack of USEPA and NRC involvement	I
"	7.3	"	NEPA/CERCLA integration authority	I
"	7.4	"	Authority to conduct Manhattan Engineering District (MED)/ 11.e.(2) remediation	I
"	7.5	"	Lack of sitewide cleanup plan	F
"	7.6	"	Decrease in reported volumes	J
"	7.7	"	Segmentation-no supplement to draft FS-EIS	J
"	7.8	"	Incomplete administrative record	J
"	7.9	"	NRC is responsible for regulating 11.e.(2) materials	I
"	7.10	"	What person is currently authorized to manage 11.e.(2) materials at Ashland	I
"	7.11	"	Why has NRC not listed sites under SDMP program	I
"	7.12	"	NRC SDMP cleanup guideline should be used	B
"	7.13	"	Linde Groundwater contamination - lack of corrective action program	F
"	7.14	"	Segmentation of review process - Groundwater	F
"	7.15	"	Decrease in reported volumes - must satisfy NRC - address non-rad MED contamination	J
"	7.16	"	Vicinity properties (Town landfill, Niagara Mohawk)	F
"	7.17	"	Interim removal actions at Linde	F
"	7.18	"	Mismanagement of NFSS residues	F
"	7.19	"	Future use assumptions	B
"	7.20	"	Thorium guideline vs. future use	B

Table 2. Ashland Sites Revised PP Comment Response Index

Date	Commenter/ Comment No.	Comment from	Description	Comment/ Response ID
"	7.21	"	Long term protectiveness (1,000 yrs vs 10,000 yrs)	C
"	7.22	"	Radon - When will peak concentration occur	B
"	7.23	"	No breakdown of costs	J
"	7.24	"	Commercial disposal profits / site reversion to state or federal govt. after closure	B
"	7.25	"	Disposal cost estimate vs. actual govt. disposal costs	B
"	7.26	"	Linde building decontamination - segmentation	F
"	7.27	"	No attempt by DOE to identify PRPs	K
"	7.28	"	Selection of ultimate disposal site - use of Nevada Test Site	B
"	7.29	"	Status of USACE's PRP cost recovery efforts	K
"	7.30	"	Why was Tonawanda Site not listed on the National Priority List (NPL)	I
"	7.31	"	Why was PP identified as "Final" before public review	J
"	7.32	"	NEPA review terminated - lack of rulemaking	F
"	7.33	"	Eight day comment extension vs. 30 day	D
"	7.34	"	Segmentation - Seaway	F
"	7.35	"	AEC's knowledge of possible BFI indemnification	F
"	7.36	"	ORAU background vs. background used for Ashland sites	B
"	7.37	"	Current source terms for each Tonawanda Site and estimates of residual source terms	B
"	7.38	"	Ownership of 11.e.(2) materials	I
"	7.39	"	Uranium guideline vs. 100 millirem/yr. dose guideline	B
1/9/98	8	NYSDEC		
"	8.1	"	Include "Seaway D" in title	F
"	8.2	"	List Tonawanda Landfill as VP to Linde	F
"	8.3	"	Support for the Thorium cleanup criteria is lacking in the PP	B
"	8.4	"	Cleanup Guideline document not distributed for public review and comment	J
"	8.5	"	Review of cleanup criteria cannot be completed due to lack of GW information	F
"	8.6	"	Segmentation - potential for additional costs	F
"	8.7	"	Request for copy of cost analysis and volume calculations	J

Table 2. Ashland Sites Revised PP Comment Response Index

Date	Commenter/ Comment No.	Comment from	Description	Comment/ Response ID
1/9/98	9	Bauer		
"	9.1	"	Radiation exposures during remediation	E
"	9.2	"	Will remediation result in unrestricted land use	B
"	9.3	"	Seaway areas A, B, and C	F
"	9.4	"	All radioactive waste should be removed	B
"	9.5	"	Waterfront development should not occur during remediation	G
1/12/98	10	F.A.C.T.S.	Extension of review	D
1/12/98	11	LWV/Lambert		
"	11.1	"	Comment period too short	D
"	11.2	"	40 CFR provides for 30 days and 15 day extension	D
"	11.3	"	Request for 60-90 day extension	D
1/16/98	12	IUC		
"	12.1	"	Off-site disposal should include uranium and vanadium recovery	H
"	12.2	"	Ashland 1 should be re-characterized to assess recovery potential	H
"	12.3	"	Sampling during removal to identify highly contaminated material	H
"	12.4	"	Table 1 in PP does not present possible recycling cost savings	H
1/16/98	13	Givens, Funke, Work		
"	13.1	"	No reference to disposal site impacts, specifically Dawn disposal site	G
"	13.2	"	Disposal at sites where license is being challenged	B
"	13.3	"	Transportation safety issue at Dawn disposal site	G
"	13.4	"	PP does not address impacts at disposal sites relative to minority and low-income populations	B
1/18/98	14	Poltowicz	Support for Alternative 2	I
1/20/98	15	LWV/Lambert		
"	15.1	"	Insufficient review time	D
"	15.2	"	F.A.C.T.S was not involved in negotiations	D

Table 2. Ashland Sites Revised PP Comment Response Index

Date	Commenter/ Comment No.	Comment from	Description	Comment/ Response ID
1/20/98	16	F.A.C.T.S		
"	16.1	"	Flawed process	I
"	16.2	"	Lack of USEPA and NRC involvement	I
"	16.3	"	Explain FUSRAP - cite authority	I
"	16.4	"	Authority to integrate NEPA/CERCLA, conduct MED/ 11.e.(2) remediation	I
"	16.5	"	Lack of sitewide cleanup plan	F
"	16.6	"	NEPA review terminated - lack of rulemaking	I
"	16.7	"	Segmentation-no supplement to draft FS-EIS	J
"	16.8	"	Incomplete administrative record	J
"	16.9	"	NRC is responsible for regulating 11.e.(2) materials	I
"	16.10	"	What person is currently authorized to manage 11.e.(2) materials at Ashland	I
"	16.11	"	Why has NRC not listed sites under SDMP program	I
"	16.12	"	NRC SDMP cleanup guidelines should be used	B
"	16.13	"	Linde GW contamination - lack of corrective action program	F
"	16.14	"	Segmentation - Seaway, BFI indemnification	F
"	16.15	"	Segmentation of review process - GW	F
"	16.16	"	Linde building decontamination - segmentation	F
"	16.17	"	Vicinity properties (Town landfill, Niagara Mohawk)	F
"	16.18	"	Decrease in reported volumes - must satisfy NRC - address non-rad MED contamination	J
"	16.19	"	Interim removal actions at Linde	F
"	16.20	"	Mismanagement of NFSS residues	F
"	16.21	"	Long term protectiveness (1,000 yrs vs 10,000 years)	C
"	16.22	"	Radon - When will peak concentration occur	B
"	16.23	"	Future use assumptions	B
"	16.24	"	Thorium guideline vs. future use	B
"	16.25	"	Radon - When will peak concentration occur	B
"	16.26	"	No attempt by DOE to identify PRPs	K

Table 2. Ashland Sites Revised PP Comment Response Index

Date	Commenter/ Comment No.	Comment from	Description	Comment/ Response ID
"	16.27	"	No breakdown of costs	J
"	16.28	"	Disposal cost estimate vs. actual govt. disposal costs	B
"	16.29	"	Commercial disposal profits / site reversion to state or federal govt. after closure	B
"	16.30	"	Selection of ultimate disposal site - use of NTS	B
"	16.31	"	Designation of site waste as "non-defense"	I
"	16.32	"	Status of ACE's PRP cost recovery efforts	K
"	16.33	"	NEPA review terminated - lack of rulemaking	F
"	16.34	"	Eight day comment extension vs. 30 day	D
"	16.35	"	Why was Tonawanda Site not listed on the NPL	I
"	16.36	"	Revised PP is part of full NEPA/CERCLA package, Revised PP not "Final"	J
"	16.37	"	ORAU background vs. background used for Ashland sites	B
"	16.38	"	Current source terms for each Tonawanda site and estimates of residual source terms	B
"	16.39	"	Ownership of 11.e.(2) materials	I
"	16.40	"	Confirm site-specific uranium guideline	B
"	16.41	"	Change in reported average radionuclide concentrations	J
1/21/98	17	LWV/Lambert		
"	17.1	"	Insufficient review time	D
"	17.2	"	Comments cannot be completed until questions raised by F.A.C.T.S. are answered	D

4.1 Comment Response ID - A - Support of Proposed Plan

Includes comments: 1.1, 1.2, 1.6.1, 1.7, 1.9, 2.1, 4.1, 5, 6.1

Generic comment: Several comments were received in support of the PP and the proposed preferred alternative.

Comment Response: The preferred alternative meets commitments made to community representatives, is fully protective of human health and the environment, complies with all applicable or relevant and appropriate requirements (ARARs), and provides the best balance among the alternatives that were evaluated for the Ashland sites. The remediation that will be performed on the Ashland sites will constitute a permanent remedy for the Ashland sites in that materials exceeding the cleanup guideline developed to protect human health and the environment will be removed from these sites for off-site disposal. This action will allow for the future development of these properties consistent with the Town of Tonawanda Waterfront Region Master Plan.

4.2 Comment Response ID - B - Approach to Proposed Plan development (cleanup guideline, extent of removal, volume calculations)

Includes comments: 1.3.1, 1.6.2, 1.8.1, 1.8.2, 1.12, 1.14, 1.15, 2.2, 7.12, 7.15, 7.19, 7.20, 7.22, 7.24, 7.25, 7.28, 7.36, 7.37, 7.39, 8.3, 9.2, 9.4, 13.2, 13.4, 16.12, 16.22, 16.23, 16.24, 16.25, 16.28, 16.29, 16.30, 16.37, 16.38, 16.40, 16.41

Generic comment: Some commenters expressed concern for the approach to the PP development and made recommendations on cleanup criteria, excavated soil disposal options, dose limits and modeling, and the use of site data. When considering the cleanup criteria, commenter opinions ranged from a complete opposition to any removal in the belief that site remediation would be a waste of money, to agreement with the PP that the selected alternative will be protective to future land users, and to recommendations that all radioactive waste from the Ashland sites and all of Seaway should be removed.

Soil disposal options were addressed by several commenters. Some believe that disposal costs are inflated or are otherwise inaccurate, some believe that soil should be deposited on a government-owned facility and not on a commercially-owned facility (to save tax dollars), and some question the selection of the disposal site.

The dose limit for the site was addressed by some commenters with emphasis on the NYSDEC Technical Administrative Guidance Memorandum (TAGM), and DOE and Nuclear Regulatory Commission (NRC) limits. It was also suggested that NRC guidelines be used to develop site remedial alternatives. One commenter suggested the use of Oak Ridge Associated University (ORAU) background data. Additional information was requested regarding the uranium and thorium guideline developments, cost estimate data, and information on residual radionuclide and chemical concentrations.

Response: Cleanup criteria for the Ashland sites were developed using the CERCLA process. The cleanup criteria must satisfy the CERCLA acceptable risk range as well as the ARARs. The Th-230 guideline development considered intended and reasonable future land use, the likely maximum exposed individuals, and the criteria included in the ARARs. The key ARARs included EPA 40 CFR 192 and NRC 10 CFR 20. The result of the guideline development effort was a cleanup criteria of 40 pCi/g Th-230.

The guideline derivation demonstrated that the conditions at the site, after removing soils exceeding the site-specific derived guideline of 40 pCi/g Th-230, will be protective of human health and the environment, meet the ARARs, and meet the acceptable CERCLA risk range established by the USEPA in the NCP. The analysis also demonstrated that at this cleanup criteria level, the estimated doses to receptors for the intended land uses (commercial/industrial) meet the objectives defined in the to be considered (TBC) guideline of 10 mrem/yr (NYSDEC TAGM 4003) for intended land use.

Leaving the site under current conditions (the No Action alternative) could result in dose and risk levels above specified limits under some potential future use scenarios (as indicated in the PP). Remediating the site to the site-specific criteria would likely lower already low estimated doses and risks, but at a cost of up to an additional \$34,000,000. This additional cost is not balanced by the benefit of a significant reduction in radiological dose or risk. In summary, the cleanup criteria for the selected alternative (Alternative 2A) is based on conservative assumptions using methods accepted by USEPA, considering all applicable or relevant and appropriate laws standards or requirements, and considering other guidelines, as appropriate.

Disposal options for excavated soil are evaluated in the Ashland sites' detailed cost estimate. These cost estimates are available and have been entered in the administrative record. CERCLA provides that cost is a criteria for evaluation of remedial alternatives, but that it may only be used to compare those remedial alternatives which are protective of human health and the environment and which will comply with ARARs. Among the alternatives considered, the selected remedy is the lowest cost which is both adequately protective and complies with ARARs. Appropriate disposal facilities were evaluated under DOE and are being evaluated by USACE in an effort to reduce cost without compromising the final remedy. The selection of the ultimate disposal site will be addressed as part of the Remedial Action phase of the cleanup using the standard government procurement procedure after completion of the remedial design and prior to commencement of the remedial action.

To assure that estimates do not drastically underestimate actual costs, it is assumed that soils exceeding the cleanup guideline will be excavated and shipped to an off-site disposal facility in the western portion of the United States. The cost of disposal per cubic yard is a negotiated cost and is not intentionally inflated or misrepresented in cost estimates. The ultimate goal of each cost estimate is to allow USACE to accurately project funding requirements for activities such as the remediation of the Ashland sites. It is not beneficial to underestimate or overestimate potential disposal costs.

As mentioned, dose considerations from NRC and NYSDEC were considered in the evaluation of possible Th-230 concentration guidelines. By removing soils exceeding the site-specific derived guideline of 40 pCi/g Th-230, doses to future industrial workers are calculated to be lower than the most conservative criteria considered (NYSDEC) and will also meet criteria for indoor radon concentrations, total radium concentrations, and lifetime risk.

The calculated dose for intended future land use is 7 mrem/yr, which is below the NYSDEC 10 mrem/yr guideline. The dose estimate for a hypothetical non-farming resident at the Ashland sites was also calculated. This dose was estimated to be approximately 20 mrem/yr, which is less than the recently promulgated NRC criteria of 25 mrem/yr, and much less than the value of 86 mrem/yr as stated by one of the commenters.

A uranium guideline of 60 pCi/g total U was previously developed for all of the Tonawanda sites in 1988 by Argonne National Laboratory (ANL) for the DOE. For the Ashland sites, this guideline is superseded

by the 40 pCi/g Th-230 guideline. The Th-230 guideline was developed specifically for the Ashland sites taking into account the intended land uses and the effects of all the radionuclides at their relative distribution at the Th-230 guideline value. At this value, the U-238 concentration remaining at the site is expected to be well below the previously derived guideline. The Th-230 guideline was developed using conservative exposure parameters and assumptions, and used site specific data.

The guideline development was performed in accordance with USEPA guidance and provides conservative estimates of dose and risk to a maximally exposed individual. The NRC provides guidance for performing dose calculation in support of decommissioning activities. Although the site is not and has not been licensed by the NRC, the decommissioning criteria is relevant and appropriate and will be met after remediation is complete.

Site data were used in dose and risk calculations to calculate the Th-230 guideline value for Alternative 2A. This data included radiological data collected during the RI activities and stored in the site database. Other studies have been performed (specifically referencing the ORAU study) that could be used in dose and risk estimates. This data and the appropriate quality assurance and quality control information is not, however, maintained in the site database. Considering that the site database already contains data from hundreds of samples, it was not considered appropriate or necessary to incorporate the ORAU (or other) uncontrolled data.

Estimates of the radionuclide concentrations were made for the Ashland Sites using all available Ashland and Seaway data. The first estimate was the average concentrations for the site in the current state before any removal actions are initiated. The average concentrations (95% UCL of Mean), including background, for Ra-226, Th-230, and U-238 were 8.59 pCi/g, 111 pCi/g, 27.2 pCi/g, respectively. After removing soils with Th-230 > 40 pCi/g, the average concentrations (95% UCL of Mean), including background, of the remaining soils were estimated for Ra-226, Th-230, and U-238 to be 1.22 pCi/g, 12.4 pCi/g, and 6.26 pCi/g, respectively. The DOE had considered another approach for remediation that would have resulted in a 2-meter thick soil layer with a uniform soil concentration of 40 pCi/g Th-230. Under this approach, the average concentrations of the remaining soils were estimated for Ra-226, Th-230, and U-238 to be 2.7 pCi/g, 40 pCi/g, and 8.8 pCi/g, respectively. This approach is not being considered by USACE.

4.3 Comment Response ID - C - Residual contamination and exposure

Includes comments: 1.3.3, 1.3.4, 2.3, 2.5, 2.6, 2.8, 4.6, 7.21, 16.21

Generic Comment: Some commenters expressed concern over post-remedial conditions. Comments included concern over the source and application of clean backfill, post-closure monitoring, long-term protectiveness, future indoor radon concentrations, and residual radionuclide concentrations.

Response: Prior to backfilling the excavations with clean fill, the soils remaining will be tested to ensure that the cleanup criteria has been achieved. Clean backfill will be supplied from an off-site commercial source. The USACE intends to backfill excavations with this clean soil, vegetate the area and restore the site to its original appearance (or better).

Once the site has been restored, it can be released for development into an industrial/commercial-use facility with 5-year reviews. Monitoring will not be required and residual radionuclide concentrations

will, on average, be much less than the guideline value resulting in actual doses and risks less than specified limits. Consequently, the remedy will be protective of human health and the environment, including ecological receptors at the site.

Because the primary contaminant is Th-230 (with a 77,000 yr half-life), radon concentration will peak well into the future. However, the radon and radium concentrations estimated for the site after remediation are within acceptable limits over the required 1,000 year review period (40 CFR 192), the maximum time period to be modeled according to regulations, and are not anticipated to be of concern given the site history, configuration, and intended land use. For dose modeling, no credit is taken for backfill materials.

4.4 Comment Response ID - D - Public involvement during decision making

Includes comments: 1.8.3, 3.1, 7.33, 10, 11.1, 11.2, 11.3, 15.1, 15.2, 16.34, 17.1, 17.2

Generic Comment: The PP was created without public involvement, excluding one of the stakeholder groups, and leaving stakeholder questions unanswered. The comment period is too short providing insufficient review time.

Comment Response: When the Fiscal Year (FY) 1998 Energy and Water Appropriations Bill transferred administration and execution of FUSRAP to USACE from the DOE, the Buffalo District assumed responsibility for issuing the PP for the Ashland sites. Prior to releasing the PP for public comment, USACE reviewed community concerns to maximize stakeholder opportunity to participate in the decision-making process. Mindful of the concerns about limited public participation in development of the PP, USACE prepared a communications plan for release of the PP. The activities detailed in that communications plan are discussed in Section 2, Overview of Public Involvement. The public involvement opportunities offered by USACE were intended to encourage public participation in the CERCLA decision process, and they do meet the requirements of CERCLA, as amended, and the NCP.

USACE representatives provided several opportunities for stakeholders and the community to receive answers to their questions about the PP. One opportunity was provided at the public meeting on December 17, 1997, prior to the portion of the meeting reserved for the acceptance of public comment. Buffalo District employees also had informal discussions with members of the public on the telephone.

The PP was issued on November 10, 1997 and USACE granted a 30-day extension to the comment period. An additional 11 days was added to this extension after several members of the public requested additional time for preparing their comments. With the extension, the comment period totaled 71 days. Other extensions were considered, however, USACE determined that additional extensions were not appropriate.

When FUSRAP was transferred to USACE, Lieutenant Colonel Michael Conrad, Commander of the Buffalo District, met with all key stakeholders for the Ashland sites. Three representatives from F.A.C.T.S. were included in this meeting. Representatives of this group also submitted comments, both at the public meeting and in writing. Their concerns, as stated in these comments to USACE, have been considered in the decision regarding the remedy selection, and the responses are included in this Responsiveness Summary.

4.5 Comment Response ID - E - Exposures, risks, monitoring during remediation

Includes comments: 1.4, 1.11, 4.3, 9.1

Generic comment: Health/safety issues and risks due to radiation exposure during remediation and transportation should be addressed.

Response: For remediation at the Ashland sites, the remediation contractor will develop, implement and have available for audit, a minimum number of work plans which will be able to demonstrate compliance with USACE requirements: Ionizing Radiation Protection, ER 385-1-80; Radiation Protection Manual, EM 385-1-80; Safety and Occupational Health Document Requirements for Hazardous, Toxic, and Radioactive Waste (HTRW) and Ordnance Explosive Waste (OEW) Activities, ER 385-1-92 (Appendix B); Safety and Health Requirements Manual, EM 385-1-1, 1996.

Additional requirements include the Resident Engineers Management Guide for HTRW Projects, EP 415-1-26 and 260 (Safety); Occupational Health and Safety Administration (OSHA) General Industry Standards 29 CFR 1910.120 and 1096, OSHA Construction Standard 1926.53; NRC Standard 10 CFR 19.20, 10 CFR 20, 10 CFR 30; Department of Transportation Regulations 49 CFR parts 170-179 and 290-397; and USEPA Regulations.

Compliance with the above requirements will ensure that the health/safety issues and risks due to radiation exposure during remediation and transportation, to site workers as well as the surrounding population, will be successfully addressed.

Appropriated funds will be used to fund the cost of response actions on the site, and no particular groups will be provided with funding. USACE will continue to provide information on the remedial action to the public and welcomes public interest in the work throughout the project.

4.6 Comment Response ID - F - Other sites, segmentation

Includes comments: 1.13.1, 1.13.2, 1.13.3, 1.16, 2.12, 4.5, 7.5, 7.13, 7.14, 7.16, 7.17, 7.18, 7.26, 7.32, 7.34, 7.35, 8.1, 8.2, 8.5, 8.6, 9.3, 16.5, 16.13, 16.14, 16.15, 16.16, 16.17, 16.19, 16.20, 16.33

Generic Comment: Comments were made regarding the decision to address the various locations within what was previously been called the "Tonawanda site" separately, and the potential implication it has on; National Environmental Policy Act (NEPA) compliance, cost and the remediation of each site. In addition several specific comments pertaining to planned actions at other sites that are not the subject of the current PP were submitted along with comments regarding references to other sites in the PP.

Comment Response: USACE is addressing all FUSRAP sites, including the Ashland sites, pursuant to the authority of and in compliance with the CERCLA (42 U.S.C. Section 9601 et seq.) and the NCP (40 CFR Part 300). Additionally, in accordance with 32 CFR 651.8, USACE has and will integrate appropriate NEPA procedures into the process required by CERCLA. The CERCLA process is deemed to satisfy the requirements of NEPA.

Before proposing the plan to remediate the Ashland sites, USACE carefully considered the program management principles set forth in NCP, 40 CFR 300.430. Based on those goals it was determined that it

was appropriate to remediate the Ashland sites to achieve significant risk reduction quickly while the remainder of the Tonawanda sites are being addressed and to expedite the completion of the total cleanup. It was also noted that due to the geographic position of the Linde site relative to the Ashland sites, there will be no adverse impacts on the Ashland sites from other Tonawanda sites after remediation is complete. Although Linde is higher in elevation than the Ashland sites, drainage from the Linde site is directed to Twomile Creek and does not enter the Ashland sites. Drainage from the Ashland sites is via Rattlesnake Creek to Twomile Creek and into the Niagara River. Testing conducted during the investigation phase of the remedial investigation/feasibility study (RI/FS) process, did not indicate impacts to the surface water at the confluence of Rattlesnake Creek and Twomile Creek, indicating that there is no impact from the Ashland sites on the Niagara River. It was also determined that the cleanup of the Ashland sites will not be inconsistent with nor preclude implementation of the final remedies at the remaining Tonawanda sites. Pursuant to that determination, and consistent with the NCP, 40 CFR 300.430(f)(2), the decision was made to propose a plan to remediate the Ashland sites at this time and prior to proposing remedies at other Tonawanda sites.

Proposing a plan for a separate operable unit of a site is not inconsistent with NEPA compliance. 32 CFR 651.8(a)(8) indicates that completion of a FS prepared in accordance with 40 CFR Part 300 and 40 CFR Part 1500-1508 will affect compliance with NEPA by providing a substantive and procedural standard to ensure full consideration of environmental issues and alternatives, as well as full public participation. In this case, an appropriate FS was completed and the process required by 40 CFR Part 300 for proposing a final decision at a portion of the studied site has been properly followed. Therefore, the decision to proceed at the Ashland sites is in compliance with NEPA.

Regarding the specific comments received about other FUSRAP sites, those concerns will be addressed when action is proposed at those specific sites. The public will continue to be informed of schedules and actions at the other Tonawanda FUSRAP sites through the continued implementation of the Community Relations Plan.

In response to the comments regarding references to other sites in the plan: Seaway D has been added to the title. USACE is aware of the Tonawanda Landfill site, is evaluating the appropriate approach to response, and will be in communication with the Town of Tonawanda officials regarding any response actions. USACE will address additional vicinity properties as designations are made.

In a March 27, 1998 letter to the NYSDEC, USACE responded to NYSDEC questions about groundwater concentrations resulting from residual radioactive contamination at the Ashland sites (USACE 1998). This information is available in the Administrative Record. The USACE response described the use of USEPA's VLEACH model to estimate the leaching of radionuclides to groundwater after the sites are remediated in accordance with the site-specific cleanup guideline of 40 pCi/g Th-230 derived from the Ashland sites (DOE 1997).

The modeling used concentrations of total uranium, radium (Ra)-226 and Ra-228 and Th-230 estimated by DOE (DOE 1997) to remain on the Ashland properties after cleanup to site-specific guidelines and very conservative assumptions concerning the solubilities of the radiologically contaminated source material. The results of modeling showed that the resulting concentrations of the radionuclides in groundwater would be below federal drinking water standards that have been calculated to be protective of human health and the environment at levels less than 10^{-6} for increased cancer risk.

Based on the conclusions concerning geological conditions that indicate that contaminant leachate from the Ashland properties are not likely to reach groundwater (BNI 1993), and the prediction using the VLEACH model showing radionuclides at levels in groundwater below drinking water standards (USACE 1998), it was concluded that risks to groundwater from radiological contamination will be minimal after the cleanup at the Ashland properties to the site-specific guideline.

4.7 Comment Response ID - G - Description of Proposed Remedy

Includes comments: 1.3.2, 1.5, 2.4, 2.7, 2.9, 2.10, 2.11, 4.2, 4.4, 4.7, 6.2, 9.5, 13.1, 13.3

Generic comment: Comments were made regarding how USACE was going to implement the PP and ROD. Specific questions related to the activities that will take place during and after the remediation.

Response: USACE has many years experience managing large and complex construction projects. The Buffalo District will tap into the full resources of USACE and associated contractors to ensure that the project is done properly and safely.

The current remediation plan for the Ashland sites is to excavate contaminated soils, move them to a rail siding, and transport them off site by rail. The contractor will be required to submit work plans in advance, subject to government review and approval, which will demonstrate a safe and efficient approach to the work and will also demonstrate understanding of and intent to comply with all worker and public safety requirements which apply to the work in progress. The plans will also be reviewed by regulatory agencies, including coordination with appropriate emergency response organizations, to ensure protection of human health and the environment and compliance with applicable or relevant and appropriate laws and regulations, to the extent applicable, such as the Emergency Planning and Community Right to Know Act of 1986.

The actual work will be conducted by contractors with experience on similar projects. Standard government procurement procedures will be followed by USACE in selecting qualified contractors to perform all necessary work to complete response actions at these sites.

USACE will oversee the work to ensure that it is being done in accordance with the Scope of Work, approved plans, and all safety rules and regulations. USACE's oversight will include significant presence, on-site, when work is being conducted. Reports will be prepared each day of work and the contractors work will be closely monitored and evaluated. This oversight is in addition to the quality control and safety procedures and personnel maintained by the contractor.

USACE will review the contractor's transportation and disposal plan to ensure that it complies with all applicable or relevant and appropriate laws, regulations and executive directives, and is protective of human health and the environment. Specifically, USACE will comply with the Executive Memorandum signed April 29, 1994 by President Clinton which implements requirements for federal actions affecting Indian Tribes and Nations, to the extent applicable and appropriate. Transportation or disposal plans that are judged to be in violation of applicable or relevant and appropriate laws, regulations or executive directives or present an unacceptable risk will not be approved. It is the USACE position that all aspects of the remediation, including transportation and disposal, will be conducted in a manner to minimize risk to public health and the environment.

Throughout the remediation, institutional controls will be used to ensure the safety of workers and the public. Fencing will be placed around the loading area and in other key locations to provide security. Appropriate signs will be used on-site to provide a visual warning of the site hazards. These controls will be removed after the remediation is complete.

Real estate agreements are currently being worked out at each effected property. These agreements state the conditions of use and expected restoration by the government after the remediation. Whether temporary roads and rail loading facilities will be left in-place will be subject to the agreement of the current land owners.

The current schedule shows remediation being completed at Ashland 2 in 1998 and Ashland 1 in 1999. These schedules are based on removing the volume of contaminated soil used in the cost estimates included in the PP. If site conditions vary from the modeled contamination, the project will be done either more quickly or will take longer than planned.

All work is subject to the availability of appropriated funds from Congress. Funds have been and will continue to be requested to complete all the work described for this remedial action. It is anticipated that funds will be made available to initiate the remedial action in a timely manner after the issuance of the ROD and completion of the remedial design.

Funding is currently being requested to ensure that the remedial action for Ashland 1 can be completed in 1999. There is no guarantee, however, that congress will appropriate the funds in 1999 that are ultimately requested for the FUSRAP program.

The conduct of this project does not specifically prevent the concurrent development of adjacent uncontaminated areas, in accordance with the town zoning laws and other applicable or relevant and appropriate laws and regulations. Impact to wetlands will be minimized to the extent practicable during remediation activities. Upon completion of the remediation the Ashland sites will be suitable for use as a commercial or light industrial property in accordance with the Town of Tonawanda Waterfront Region Master Plan.

4.8 Comment Response ID - H - Remedy does not consider recycling

Includes comments: 12.1, 12.2, 12.3, 12.4

Generic Comment: One comment letter was received that raised several questions relating to possible recycling of constituents contained in the soils to be remediated at the site. The commenter felt that cost savings might be realized through the separation and recycling of uranium and vanadium from the excavated soils.

Comment Response: In 1994 soil samples were obtained from several Tonawanda sites, including the Ashland sites, and tests conducted to assess the feasibility of cost effectively reducing the volume of soils requiring disposal as radioactive waste through treatment. Soil washing was the primary process evaluated. However, much of the contamination was found locked within a slag type matrix, making it difficult to chemically extract. The chemical extraction treatment process was not cost effective as it could not produce a clean soil fraction to offset the cost of purchasing and recycling the extractant solution.

Typically, the recovery of metals from soils is done through a chemical extraction process similar to the type evaluated in these treatment tests. As much of the contamination in the soils is bound within a slag type matrix, and the chemical extraction process needed for metals recovery is costly, it is not expected that recovery of metals from the soils would produce a cost savings. Thus, the selected alternative achieves the best possible result in terms of satisfying the statutory preference for remedies that employ treatment that reduces toxicity, mobility or volume as a principal element.

4.9 Comment Response ID - I - Authority

Includes comments: 1.10, 7.1, 7.2, 7.3, 7.4, 7.9, 7.10, 7.11, 7.30, 7.38, 16.1, 16.2, 16.3, 16.4, 16.6, 16.9, 16.10, 16.11, 16.31, 16.35, 16.39

Generic Comment: A number of comments were received that focused on the classification of the radioactive materials being remediated at the Ashland sites and the proper authorities associated with the remediation as well as the regulatory oversight.

Response: USACE is evaluating the nature of the materials to be disposed and will make determinations regarding waste types as necessary for proper offsite disposal. USACE will comply with all applicable or relevant and appropriate laws and regulations for the radioactive or other hazardous substances which will be disposed offsite.

The Energy and Water Development Appropriations Act of 1998, P.L. 105-62, transferred the responsibility for the administration and execution of FUSRAP from DOE to USACE. USACE is proceeding with the remediation of the Ashland sites in accordance with CERCLA (42 U.S.C. 9604 et seq.).

NRC has stated that they do not have jurisdiction over wastes created by MED prior to November 1978. NRC's jurisdiction over byproduct materials began in 1978 and they do not consider it to be retroactive to the time frame when MED material was generated.

In accordance with 32 CFR 651.8(a)(8), it is USACE policy that a feasibility study done in compliance with the NCP (40 CFR 300) provides substantive procedural standards to ensure full consideration of environmental issues and alternatives, and sufficient opportunity for the public to participate in the decision making process, making it unnecessary for a separate NEPA document to be generated.

The PP has been made available for all potentially interested parties to review, including the International Joint Commission (IJC). USACE has not received any comments from the IJC.

4.10 Comment Response ID - J - Supporting documentation

Includes comments: 3.2, 7.6, 7.7, 7.8, 7.15, 7.23, 7.31, 8.4, 8.7, 14, 16.7, 16.8, 16.18, 16.27, 16.36, 16.41

Generic Comment: Several comments were received relating to the availability of supporting documentation used in the preparation of the revised PP and designated as part of the Administrative Record for the site.

Comment Response: Documentation relating to calculations used in the cost evaluation of the investigated remedial alternatives (including volume estimates) have been placed in the Administrative Record and are available for public review. A major component of the cost analysis is the volume of the soils determined to require removal and disposal. The cost estimates used for the development of the revised PP used volumes calculated based on a model of the site contamination generated using existing soil contamination characterization results from all historical sampling conducted at the site. The calculations and results of the modeling have also been placed in the Administrative Record.

It should be noted, however, that the cleanup of the Ashland sites will not be driven by any previous or future volume estimates generated by modeling site conditions. The cleanup of these sites will be driven by the established cleanup criteria. The cost estimates and their corresponding volume estimates were generated and used in the CERCLA process to help evaluate proposed remedial alternatives. The volumes ultimately removed and actual remediation costs will vary as the soils found to require removal during the remediation process are excavated and shipped off-site for disposal.

Additional documents that should be considered for inclusion in the Administrative Record, identified and provided by one commenter, have been placed in the record, as attachments to the comments received. All other appropriate documents have been included in the Administrative Record as well.

As one commenter pointed out, the revised PP for the Ashland sites is one component of the CERCLA documentation of the remediation of the Tonawanda Site as a whole. The document distributed for public comment represents the final version of the revised PP, based on the RI/FS published in 1993 and comments received on that document relevant to the Ashland sites, the guideline derivation document published in July 1997, and the USACE version (Alternative 2A) of the originally stated Alternative 2 in the 1993 PP. The USACE Alternative 2A is equivalent to the Alternative 2 developed by the DOE except that a site-specific guideline is used instead of the generic guidelines.

A concern was raised over the differences in radionuclide concentrations presented in the RI report and subsequent presentations. The averages shown on RI page 4-159 are based upon the "short list" of data shown in the associated tables (4-24 and 4-42). When these short list data locations are plotted on the site drawings, they include only those borings located in the more highly impacted portions of the sites.

The averages used in subsequent presentations are based upon the full data set for each of the sites (found in Tables A-10 & A-15 and A-12 & A-17). These full data sets contain approximately 1.5 times the data that is in the short lists. Since the full data sets include the lower readings from the "non-impacted" portions of the sites, the averages are lower.

4.11 Comment Response ID - K - Potentially Responsible Parties (PRPs)

Includes comments: 3.3, 7.27, 7.29, 16.26, 16.32

Generic Comment: Comments were received regarding the status of any action regarding the pursuit of PRPs at the Tonawanda sites and offers of indemnification to Browning Ferris Industries (BFI).

Comment Response: USACE has begun to research issues regarding PRPs and will pursue all appropriate means to seek reimbursement from responsible parties on behalf of the Federal Government. However, at

this time, no decisions have been made regarding specific parties to pursue nor have offers of indemnification been made by USACE to resolve any liabilities that the Federal Government may have.

5. SPECIFIC COMMENTS AND SPECIFIC RESPONSES

This section of the responsiveness summary presents the comment documents, each followed by specific responses to the comments contained within the comment document.

IN THE MATTER
OF
PUBLIC MEETING
RE:
ASHLAND 1 AND ASHLAND 2
PROPOSED PLAN

Minutes of Public Hearing held at the Philip
Sheridan Building, Kenmore, New York, on Wednesday,
December 17, 1997, commencing at 7:00 P.M.

JEC:pw

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BUFFALO, NEW YORK 14202-2102

1 COL. CONRAD: I would like to welcome you
2 to tonight's public meeting discussing the
3 proposed plan for the cleanup of Ashland 1 and
4 Ashland 2 and the Seaway Area D for Delta.

5 The proposed plan that was issued by the
6 Corps of Engineers on the 10th of November, we are
7 in the process now of receiving public comments on
8 the proposed plan.

9 In case you don't know, the proposed plan is
10 indicated or located over there on your right, my
11 left in the blue cover in case you haven't seen
12 that before and that's the purpose of this meeting,
13 is to receive public comment on the proposed plan.

14 As you know, the Corps of Engineers took over
15 or you may not know, the Corps of Engineers took
16 over the FUSRAP Program starting on the 13th of
17 October, 1997 and that was signed by President
18 Clinton on that day in the Energy and Water
19 Appropriations Bill. It was probably an
20 unprecedented act by moving one program from the
21 Department of Energy into the Corps of Engineers.

22 Let me talk a little bit about the
23 congressional intent of the transfer from DOE

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1 to the Corps of Engineers on this program.

2 Congress' intent was to oversee the management,
3 the oversight, programming and budgeting, technical
4 investigations, designs, administration and other
5 activities leading to remediation, including
6 remediation for the sites. What you didn't hear
7 me say was the authority. Okay. DOE has the
8 self-regulating capability that Corps does not.
9 I will talk about that a little bit later.

10 Now, the authority to make rules for cleanup
11 is not part of the Corps of Engineers. That was
12 not transferred over to the Corps of Engineers
13 from the DOE. That still remains at DOE. Right
14 now the way that is working is that there is a
15 proposed memorandum of understanding between
16 the Department of Energy and the Corps of
17 Engineers to handle that transfer but it's quite
18 clear as to the authority that the Corps has to
19 execute not only this cleanup but other cleanups
20 in New York State and Ohio. In fact the Buffalo
21 District has eight FUSRAP sites that I am now
22 responsible for starting on the 13th of October
23 thanks to President Clinton signing that bill.

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1 So, you will hear some issues talked about,
2 whether or not the Corps has the authority to
3 clean up the sites. We have the authority to
4 clean it up, we do not regulate. We do not set
5 the criteria. We have to work through other
6 agencies to establish and to maintain that
7 criteria. That is nothing new for the Buffalo
8 District because I will talk about some of the
9 expert experience we have in other cleanups, in
10 other areas and DOE programs.

11 Let me talk a little about the -- go ahead
12 to the next slide, please.

13 Let me talk quickly about tonight's agenda.
14 I have already started into the introduction.
15 After the introduction I'm going to pass it on
16 to Mr. Dave Conboy to give a technical presentation.
17 We will then take a break. Actually I will allow
18 about 15 minutes time period for people to ask
19 questions of Dave Conboy on his technical
20 presentation. We will then take a break. We will
21 then get back up and get public comments and to
22 listen to you and how you feel, what your
23 perspective is, your views on the proposed plan.

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1 Now, again, the primary purpose of this
2 meeting here, I have to hear and we need to
3 record those comments that are coming from the
4 public on this plan.

5 Starting right now, they transferred the
6 FUSRAP from the Department of Energy to the Corps
7 of Engineers. I already started talking about
8 that. I would also like to add on that when you
9 get the Corps of Engineers, you are getting an
10 organization that is focused on execution and
11 what I mean by execution is, I am being held
12 responsible to making sure that these cleanups
13 are done efficiently, effectively, according to a
14 budget and according to a set amount of dollars
15 given to me to do that. That is the authority.
16 That is the way the Corps operates. It operates
17 on a project management principle. So, I have
18 got a lot of budget managers on these sites
19 making sure that we executing, we are on schedule
20 and in accordance with the budget. That's the way
21 the Corps has operated in the past with projects
22 and that's the way we are going to operate in
23 the operate in the future with these cleanups.

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1 In addition, the dollars that the Corps
2 of Engineers receives for FUSRAP and for other
3 programs, for your information, is program
4 dollars. They are dollars to clean up according
5 to a project for the cleanup site. Those same
6 dollars that we receive to do that work, pays the
7 salary of the Corps of Engineer employees. So,
8 we do not receive any money just for people's
9 salaries to just sit around and administer things.
10 We get program dollars that we have to not only
11 pay contractors and do the work but also pay the
12 salaries. That is key because in order to execute
13 this program, I have got so many millions of
14 dollars, I have to clean up the program as well
15 as pay salaries and that's the way the Corps
16 operates.

17 Now, the FUSRAP Program at the Corps of
18 Engineers is high priority. This is a four
19 billion to five billion dollar program. Now,
20 you compare that to this program of FUSRAP,
21 nationwide, this is about \$140,000,000. After
22 you compare the \$140,000,000 to the four or five
23 billion, it's not that much but believe me,

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1 because of the nature of this cleanup and the
2 nature of the way the program was transferred
3 from DOE to the Corps, it is a high priority
4 with the Corps of Engineers. I can attest to that
5 personally because I was summoned to Washington,
6 D.C. about two weeks after the program was
7 started and was along with my boss in Cincinnati
8 and we were told by a three-star general, chief
9 of engineers, he told me that I will not fail,
10 okay and so he paid my flight from Buffalo to
11 D.C. just to tell me that. Now, that was
12 incorporated in a two-hour meeting. Okay. That's
13 not the way the Corps operates. Normally I get
14 sent a mission down to Buffalo and I have to
15 execute it but this is such a high level, high
16 Corps of Engineers, they wanted to see my
17 eyeball-to-eyeball to get that done, okay and
18 you can probably understand when a three-star
19 general sitting in Washington, D.C. on this
20 program, he probably wants to get the same thing.
21 So, I had eye-to-eye contact with Lieutenant
22 General Ballard who told me exactly what I had
23 to do here.

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1 Now, you are also getting with the Corps
2 of Engineers, you are also getting the Buffalo
3 District, okay. The Buffalo District Corps of
4 Engineers is sitting right there at Black Rock
5 Lock, about 250 people. The majority are
6 civilians. There are only two people that
7 wear this uniform. I am the commander of the
8 district and my deputy, one of my two deputies
9 is also a major, okay. The rest of them are
10 departmental civilians and we have been involved
11 in civil works projects, the Corps has been
12 involved in civil works projects since 1829.
13 We were in Harborzak in 1829. The Buffalo
14 office has been in Buffalo since 1857, the
15 permanent office there. So, we have been around
16 awhile, okay. All the people, I've got 250
17 people employed right there at Black Rock Lock
18 that have some experience, actually they have
19 quite a bit of experience in cleanups and as a
20 part of that 250 people, I have got a hazardous,
21 toxic, a radiological waste design center already
22 there, before FUSRAP, before we could even spell
23 FUSRAP 60 days ago, that design center was

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1 already there. I have done cleanups for DOD.
2 We have done cleanups for other federal
3 agencies, primarily hazardous and toxic wastes,
4 not a lot of radiological waste cleanup, okay
5 but there has been a lot of radiological waste
6 cleanup with the Corps of Engineers and when we
7 talk about the district, we are talking about the
8 Corps of Engineers.

9 Now, we have access, we have people from
10 Louisville, Nashville and Baltimore, other
11 districts throughout the nation to come assist
12 us in this endeavor.

13 So, those are some of the things you are
14 getting with the Buffalo District. You are
15 getting experience because we have done other
16 cleanups before. You have also got people
17 locally to draw from, okay. If you want to
18 know what is going on with these projects, you
19 don't have to very far. We right here in Buffalo
20 and in addition to that, we are very familiar
21 with the public comment period and the process.
22 We do these things with a number of our projects,
23 high-level projects. We end up going through the

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1 public comment period. We have a public meeting
2 such as this and some of these meetings aren't
3 quite as well attended as this and I thank you
4 but nevertheless, this is nothing new for the
5 Corps of Engineers to bring people in in this
6 process.

7 Now, I have told you a little bit about the
8 transfer from the DOE to the Corps of Engineers.
9 I've talked a little bit about what the Corps of
10 Engineers is. I have talked quickly about what
11 the Buffalo District of the Corps of Engineers
12 is going to do. We will talk a little bit now
13 about development of proposed plan. You probably
14 can talk about this, the people in this room can
15 talk more about this bullet than I can. Like I
16 said, before the 13th of October of this year,
17 the Corps of Engineers had nothing to do with
18 FUSRAP. So, there are a lot of people in this
19 room and I know some of these people in the
20 room have been involved with this thing for
21 in excess of five years, ten years, okay. So,
22 a lot of people can talk about the development
23 of the proposed plan.

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1 We reviewed the plan. The Corps of
2 Engineers reviewed the plan and not only the
3 people in Buffalo but we convened a small -- in
4 fact, a fairly large team nationwide and reviewed
5 all of the FUSRAP sites.

6 We do our cleanups through CERCLA. Most
7 people have heard that acronym before, okay.
8 That's the criteria that we use for cleanups
9 and that's the same criteria that we used to
10 propose the proposed plan and to clean up Ashland
11 1 and 2. So, we reviewed that thing, not only
12 we as the Buffalo District but we, the Corps of
13 Engineers. We are satisfied that the proposed
14 plan incorporates the CERCLA requirements as well
15 as incorporating the NEPA values that are
16 important, that are law to clean up items of
17 radiological waste, hazardous and toxic, whatever
18 it be across the United States.

19 So, we have done that process before for
20 other cleanups, primarily hazardous and toxic
21 in other areas and in the more central part of the
22 country. So, we will review that same cleanup
23 with the same plan according to CERCLA criteria.

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1 We are content and satisfied about the way it
2 was structured in the past to do that. If we
3 weren't satisfied, we would not be able to have
4 this public meeting. There is no way we could
5 go out on the street with the proposed plan if
6 we were not satisfied as an agency that it met
7 the intent and the letter of the laws that require
8 us to do environmental cleanups.

9 Now, the third bullet there in the public
10 input, that's pretty much like I said before,
11 I already said twice, that's the purpose of this
12 meeting right here. We need to hear your
13 concerns, your issues, whatever you think about
14 the proposed plan. We are new on the block. We
15 understand that. There are a lot of things out
16 there that you know, a lot of things out there
17 that we probably don't know and that's the reason
18 for this meeting.

19 The last thing, of course, no decision has
20 been made. Again, the purpose of this meeting,
21 we have to get all the information, the input
22 from the public to make the proper decision,
23 proper recommendation to get a record of decision

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1 on this cleanup.

2 Now, I'm going to stop talking here shortly
3 and I'm going to pass it over to Dave Conboy who
4 will give you a technical presentation. What I
5 told Dave to do, he has got about a 20 to 25-minute
6 presentation and to help explain the proposed
7 plan in case some people don't understand it.
8 I told Dave we should then allow for about a
9 15-minute session to answer direct questions on
10 his presentation. After that we will take a
11 break and we will allow for public comment.

12 Some of the ground rules for the public
13 comment, so we are not here three or four days
14 from now still sitting around the table is that,
15 what you see up there on the slide. Again, one
16 person speaks at a time. We try to limit the
17 discussion to five minutes. That way everybody
18 will get an opportunity to be heard. If you feel
19 you would like to say something more than five
20 minutes, I would ask that you send it in in
21 writing or by some other means. Otherwise,
22 summarize your presentation in five minutes,
23 please.

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1 I have got one break scheduled right now
2 right before the comment period and we will do
3 more if needed.

4 Okay. We will stay as long as it is
5 necessary.

6 For your own information and because this
7 is a requirement by law to have this public
8 meeting, we have also incorporated a court
9 reporter to record all of the public comments
10 that are made at this meeting. So, that's the
11 reason for him up here in the front.

12 All right. Now, the proposed plan is
13 stated basically in a few sentences up here on
14 the next slide. The remedy action is to excavate
15 and ship for off-site disposal soils exceeding 40
16 picocurie per gram of thorium followed by a site
17 restoration. That is the plan.

18 Now, what are the benefits of that? There
19 are four basic benefits. It's fully protective
20 of human health and the environment or else there
21 is no way we could put that plan out. It meets
22 all requirements of all relevant regulations,
23 including the DEC regulations. It can be

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1 initiated in a timely manner. A timely manner
2 means this year and the fourth bullet is, it's
3 responsive to community concerns.

4 Okay. What I would like to do now is pass
5 over the baton to Mr. Dave Conboy, the Project
6 Engineer for this proposed plan for the Corps of
7 Engineers. Dave.

8 MR. CONBOY: Thank you, sir. My name is
9 -- is this mike on? Can you hear me in the back?
10 Hello? Okay. Thank you.

11 My name is Dave Conboy. I am an environmental
12 engineer with the Buffalo District of the Corps of
13 Engineers and I have been the project engineer
14 on the Ashland 1 and Ashland 2 sites since the
15 Corps took over the program from the Department
16 of Energy. My interest in these sites actually
17 goes back further than that because I grew up
18 on Grand Island almost directly across the
19 Niagara River from the sites and I currently
20 live on Grand Island with my wife and kids. So,
21 I have an appreciation and understanding of some
22 of the concerns that you may have and the level
23 of interest that the community has here in

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1 Tonawanda and I think it's great that we really
2 have a great showing of support and a showing
3 of public participation in this process because
4 like the Colonel said, the major intent of this
5 meeting is to get your public input.

6 As I see my role, my role is to provide you
7 some background on the site, give you some
8 information on the nature and the extent of the
9 contamination and to help you understand how
10 we came to a conclusion on what our recommended
11 plan was.

12 So, we have an agenda for tonight that we
13 will follow that hopefully will meet that goal.
14 We will start out, I will go over a discussion
15 of the history of the site, discuss how they
16 became contaminated in the first place, the
17 studies and investigations that were completed,
18 we will discuss those. The studies were done
19 to delineate the extent and the nature of the
20 contamination. Then I will discuss briefly
21 the proposed plan that was issued in 1993 by
22 the Department of Energy and perhaps even more
23 importantly I will discuss some of the

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1 responses that we got from that proposed plan
2 and some of the community concerns that came
3 out of that proposal.

4 From that I will discuss how we took the
5 public input and incorporated that into the
6 alternatives that we are considering in 1997
7 under the Corps plan and then I will go into
8 a fairly detailed presentation of the technical
9 background, how we came up with the actual
10 cleanup guidelines because I think that's
11 important, the Colonel thinks it's important
12 for you to understand so that we can all basically
13 have the same basis for discussing and commenting
14 on the plan.

15 This is an aerial view of the site, the
16 Ashland 1 and Ashland 2 site, Ashland 1 being
17 here and Ashland 2 located on the other side of
18 the Seaway Landfill. One thing many of you may
19 know is that the Seaway Landfill is also in the
20 FUSRAP Program. We won't be discussing the Seaway
21 Landfill tonight because we are addressing that
22 FUSRAP site under a different action and in the
23 future we will have a proposed plan and we will

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1 have public comment on that plan.

2 So, tonight we are basically talking about
3 Ashland 1 and Ashland 2. To orient you, the 190
4 is located here, the Grand Island toll booth is
5 about right here, the Niagara River and then
6 Grand Island is located there.

7 One thing with Seaway is that there is
8 an area that the Colonel mentioned, Seaway
9 Area D that is included in the proposed plan
10 that we are going to discuss tonight. That's a
11 small area that is located right adjacent to
12 Ashland 1. It's basically just across the
13 boundary from the Ashland 1 property. So, it's
14 included in the cleanup of Ashland 1 and Ashland
15 2.

16 Some of the history of the site, as some
17 of you may know, the Linde site was a division
18 of union carbide and had during the second World
19 War some experience in processing uranium ore
20 and that was a benefit to the weapons production
21 and the uranium production program was
22 integral to the Manhattan Project. What they
23 did at the Linde site was they took this

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1 low-grade uranium ore and they tried to separate
2 and take away the uranium fraction and when they
3 did that with the process, they also ended up
4 with what was called a waste filter cake. The
5 waste filter cake contained the contaminants
6 that they didn't want in the uranium fraction
7 and that waste filter cake contained low levels
8 of thorium, low levels of radium that could not
9 be separated effectively into the uranium
10 fraction and also radium.

11 Over the course of the Manhattan Project,
12 approximately 8,000 tons of this filter cake
13 waste were transported off the Linde site to
14 a place that was then known as the Haist
15 property which is now called Ashland 1. After
16 the war, I guess in about 1960, the government
17 did a survey of that property and based on the
18 environmental regulations at that time,
19 identified that property could be released for
20 use, the radiological contamination was not
21 greater than the levels of concern at that time.

22 So, the property was picked up by Ashland
23 and they used it in the refining business.

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1 Over the course of using that property, in
2 1974 they decided to build some tanks to store
3 fuel in the area where the waste was disposed
4 and when they excavated to build those tanks and
5 put those tanks in, they took some of that soil
6 from Ashland 1 and transported it to Ashland 2
7 and also to the Seaway area, various areas in
8 within the Seaway property.

9 In the 1980s some additional investigations
10 were done at the site because the environmental
11 laws became more strict in the eighties and it
12 was identified that this was really a site that
13 we needed to take a closer look at and identify
14 if there really is a contamination of concern.
15 Consequently it was entered into the FUSRAP
16 Program in 1984.

17 As the Colonel mentioned, there is an
18 orderly fashion and an orderly process that has
19 to be followed with any environmental
20 investigation and any environmental activity
21 and what we followed was the CERCLA process
22 and that stands for the Comprehensive
23 Environmental Response Compensation and

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1 Liability Act which you may often heard referred
2 to as to the Super Fund. That's the process
3 that is called under the Super Fund because it's
4 a very comprehensive process that forms a very
5 step-wise approach to doing your investigations
6 and perhaps most importantly, forms -- it provides
7 the framework for public input and public comment
8 over the course of the investigation at different
9 times, including after we issue a proposed plan
10 like we are doing tonight.

11 The different investigations that are done
12 start out with a remedial investigation. That's
13 done first to determine the nature and the extent
14 of the contamination. From that information you
15 gather from that study and do what is called a
16 baseline risk assessment. That study is done to
17 determine if the level of contaminations that
18 are present at the site are of any environmental
19 concern and you look at the present use scenarios
20 and you also look at the future use scenarios.
21 When we looked at it under the present use
22 scenarios, the site was okay because it presently
23 is not occupied and may only have people coming

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1 through intermittently but if you look at the
2 future uses of the site which are certainly
3 something that the Town of Tonawanda is
4 interested in, then those sites need
5 remediation.

6 So, once you decide that you need
7 remediation, you do what is called a
8 feasibility study and this study is done to
9 determine potential alternatives to cleanup and
10 to weigh those alternatives against certain
11 criteria and against each other.

12 From that and all the previous studies,
13 you do what is called a proposed plan and that
14 proposed plan outlines and again kind of
15 summarizes the previous studies and it also
16 identifies what the proposed plan is.

17 From that a lot of comments came in that
18 the proposed plan was not acceptable. So, the
19 next study that was done was called a guideline
20 derivation and that was done to see if there
21 might be a site specific solution to this
22 problem that may be able to incorporate the
23 values of the community and still get the

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1 site cleaned up.

2 From all that previous information, the
3 Corps of Engineers took that into the proposed
4 plan and then that kind of summarized the
5 previous investigation and studies and in the
6 proposed plan we present what our recommendation
7 is and the basis for that recommendation.

8 As the Colonel mentioned, we also
9 incorporated the requirements of NEPA. NEPA
10 is the National Environmental Policy Act that
11 also has a specific process that has to be
12 followed and following the CERCLA process, we
13 incorporated the requirements of NEPA. So, we
14 had an umbrella basically of all the environmental
15 requirements and values within that framework.

16 This slide shows the general location of
17 contamination and this is again very general and
18 it's based on the studies that were done and you
19 can see that the general areas that were
20 initially identified in studies are in many
21 cases, at least with Ashland 2, much greater
22 than the area than actually turned out to be
23 contaminated and you can see, this is the area

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1 of contamination for Ashland 1 and this is the
2 area of contamination for Ashland 2 and if you
3 think about the way that the wastes were disposed
4 of, that makes sense because Ashland 1 was
5 where the majority of the waste was disposed
6 and Ashland 2 is the area that only a small
7 portion of the waste was taken from and disposed
8 and you can also see in the area Seaway D and
9 if there is a Seaway Area D, there must be a
10 Seaway Area, A, B and C and I'm not showing
11 those but those are located here and there are
12 some additional areas there which again we won't
13 be discussing under the proposed plan for
14 tonight.

15 So, what are the soil contamination levels?
16 What did the studies identify as the contaminants
17 of concern and what were their levels? This
18 chart summarizes the contaminants that were
19 found at Ashland 1 and Ashland 2. The primary
20 contaminants being radium, uranium and thorium
21 and the units for these contaminants are listed
22 as picocuries per gram. I won't go into detail
23 on what that means but it is a level of the

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1 activity of the radiolnuclide and basically
2 the higher it is, the more contamination there
3 is.

4 A couple of things that are important to
5 look at on this chart, first of all, you will
6 notice that the contamination at Ashland 1
7 is greater than Ashland 2 on average, typically
8 about twice as great and that makes sense
9 because again, the waste was disposed of at
10 Ashland 1 and subsequently transported to
11 Ashland 2 and that process, they certainly
12 excavated probably a lot of clean soil that was
13 mixed in with that.

14 Another important thing to look at from
15 this chart is that the thorium is the most
16 abundant radiolnuclide. The radium levels on
17 average are about seven percent of the thorium
18 levels and the uranium levels again on average
19 are about 25 percent of the thorium levels and
20 that sort of gives you an indication of why
21 our cleanup is based on thorium because it's
22 the one with the greatest contamination. If we
23 clean that up to a low level, then the other

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1 contaminants of concern will be cleaned up to
2 an even lower level.

3 So, what is our rationale for cleaning
4 up the site? As I mentioned previously, the
5 hazards associated with the site are basically
6 with prolonged direct contact on the site.
7 There really is no risk off site. There is no
8 risk driving by on the thruway. The risk is
9 associated with direct contact and what that
10 means is basically ingesting or eating some
11 soil or possibly inhaling some soil if you are
12 on site. The risk again is not associated with
13 the present use of the site but it's more an
14 impact if you try to use the site for any future
15 development, an industrial park for instance.

16 Radium is the primary concern at this
17 site. Of the three radionuclides that I have
18 identified, radium is the most hazardous and
19 if you remember back to the site, radium is
20 present in the lowest quantities and the lowest
21 concentrations. So, from that standpoint that's
22 good that it's in the lowest quantities. One
23 of the major concerns with radium is that it

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1 decays to radon and many of you have probably
2 heard of radon gas as it relates to your house
3 or something of that nature but that is one of
4 the concerns associated with radium.

5 Another concern associated with thorium
6 is that it decays to radon. Over time, some of
7 the thorium that is out there on site is going
8 to become radium and that's another reason that
9 our cleanup is based on thorium because if we
10 solely based it on cleaning up the radium, on
11 the day that we finished our remediation, that
12 wouldn't be as protective as we want because
13 we want to conserve or we want to look at the
14 thorium to make sure that over time it doesn't
15 grow to create a radium problem on the site.
16 So, that's again another reason why we are
17 looking at the thorium to insure that we are
18 protected over time in the future for the
19 radium.

20 The 1993 Department of Energy proposed
21 plan, many of you probably know what that was.
22 Basically is was to excavate soil above DOE
23 generic guidelines, DOE generic guidelines and

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1 disposed on site. There was going to be an
2 on-site containment cell constructed and the
3 material would be put in there. That plan was
4 overwhelmingly rejected. The community, the
5 community leaders, the community as a whole
6 rejected the concept of having an on-site
7 disposal facility. Number one, it prevents
8 future use of the site. It also just plain not
9 a long-term solution for the community. Nobody
10 wants a waste containment cell in their back
11 yard, certainly not on a nice area fronting the
12 Niagara River. So, that plan was overwhelmingly
13 rejected.

14 So, what came from that is that we identified
15 many criteria that were important to the community.
16 First of all, we heard that any remedy selected
17 must be protective of human health and the
18 environment. That's a given based on the
19 CERCLA process anyway but certainly that's an
20 important criteria.

21 Off-site disposal is crucial to any plan.
22 We want no more consideration or you want no
23 more consideration of any on-site disposal

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1 facility. Any remediation must allow for future
2 use of the site in accordance with the Town of
3 Tonawanda master plan or the Town of Tonawanda
4 water front development plan which identifies
5 that area for use as basically
6 industrial/commercial and you also said you
7 wanted us to meet the objectives of the New
8 York State DEC guidance document. That's a
9 guidance document that has very conservative
10 exposure levels for exposure to these type of
11 contaminants, much more conservative than
12 similar federal guidance documents. So, you
13 wanted us to be conservative in our cleanup and
14 you also wanted us to initiate the remediation
15 in a reasonable time frame, get on with it,
16 get the stuff out of here so that we can continue
17 with our planning.

18 So, from that the Corps of Engineers
19 identified five alternatives associated with
20 the site.

21 The first remedial alternative at any
22 site under the CERCLA process was the no action
23 alternative. Basically at this site that would

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1 mean we would do nothing. We would periodically
2 monitor the site, do some ground water testing
3 to make sure nothing has gone off site and that
4 would be it. The cost of that proposal was about
5 \$7,000,000.

6 The next is continue with institutional
7 controls. What that means is that we would
8 basically put a clay cap over the entire site.
9 We may do some limited excavation of some soils
10 or sediments of wetland areas but there would
11 have to be institutional controls after we
12 finish that and that would involve fencing
13 around the site, limiting access to the site
14 and it would also involve some sort of a
15 restriction on future use of the site.

16 The next option was excavation with
17 on-site disposal and that is excavation of
18 on-site disposal of soils that exceed generic
19 guidelines. You may recognize this as a plan
20 from 1993 that the Department of Energy put
21 forth. It was one that we considered.

22 The next is excavation with off-site
23 disposal to generic guidelines. Based on our

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1 estimates, it was about 85,000 cubic yards
2 of soil that met that criteria and one thing
3 that I will just mention on the volumes, if you
4 may notice from the 1993 plan, it says there
5 is approximately 172,000 cubic yards of material
6 that had to be removed and it's not that the
7 material has gone anywhere or disappeared.
8 What it is is that over the course of time,
9 with any modeling tool, these volumes are
10 calculated using models and over time you
11 gather additional information, you are able
12 to better calibrate your models and you can
13 better define the areas of contamination. So,
14 that's why the volume has reduced from 172,000
15 to 85,000 in the generic guideline.

16 Another thing that is very important is
17 that when we do a cleanup, we do it to a
18 specific guideline. We don't do it based on
19 a specific volume. So, any of these volumes
20 may be somewhere incorrect. The bottom line is
21 that when we do our cleanup, it will be
22 protective to the environment and to a
23 specific guideline to make sure that we get

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1 all that we are intending to get.

2 The last alternative investigated was
3 excavation with off-site disposal to site
4 specific guidelines. Looking at that, that
5 was an estimate of about 42,000 cubic yards.

6 Based on the previous input from the
7 community and our evaluation of the CERCLA
8 criteria, the top three were basically not
9 acceptable. We heard your comments on the
10 previous proposed plan and the other two, the
11 no action and the containment with
12 institutional controls were not a solution that
13 the community wanted. So, we were left with
14 excavation and off-site disposal with either
15 site-specific or generic guidelines and what
16 I would like to do is kind of walk through
17 that process of how we determined what a
18 site-specific guideline is and also explain
19 what generic guideline is and how that fits in.

20 The generic guidelines are identified in
21 the Department of Energy Order 5400.5. In that
22 order there are stated limits. It states in
23 there that you have to have a limit. After you

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1 do your remediation, you can have no greater
2 than five picocurie per gram at the surface or
3 15 picocuries per gram in the subsurface,
4 that's for radium and thorium. The stated
5 intent of that regulation or the stated intent
6 of that order, that DOE order, is to limit the
7 exposure to the public as a result of that source
8 to less than 30 millirems per year.

9 So, the order allows you to develop
10 site-specific guidelines and cleanup criteria
11 as long as you meet the intent of the order
12 which is to limit exposure to less than 30
13 millirems per year for the intended land use of
14 the property.

15 The other thing that is stated in that
16 Department of Energy order is a requirement
17 to derive limits for other radionuclides that
18 don't have stated limits and we did that and
19 that was done for uranium and the cleanup
20 criteria for that was 60 picocuries per gram
21 of total uranium. Uranium under any of the
22 scenarios we are talking about, either
23 site-specific or generic cleanup guidelines

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1 is very conservatively removed. So, I'm not
2 going to talk any more about uranium. The
3 rest of the discussion will focus more on the
4 thorium/radium issues.

5 The other thing that is important for you
6 to recognize with these generic guidelines is
7 that it relates to a Department of Energy order.
8 This is not a law. This is not a regulation.
9 It doesn't carry the weight or the significance
10 of a law or a regulation.

11 So, how are site-specific guidelines
12 developed? Well, when you develop a site-specific
13 guideline, you have to be protective of human
14 health and the environment. That is always
15 critical. You still must comply with laws and
16 regulations. Laws and regulations, you must
17 demonstrate that your exposure is below certain
18 levels and that's where that exposure level in
19 the DOE order comes in, less than 30 millirems
20 per year and also the more conservative exposure
21 limit in New York State guidance documents.

22 You also use criteria appropriate for the
23 site and that gets down to how is the land going

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1 to be used. Well, we committed to using a
2 criteria that would allow uses of the site as
3 an industrial or commercial facility. So, that's
4 what we have to do.

5 So now, how does that work? How do you
6 establish site-specific guidelines under CERCLA?
7 First of all, the first thing you have to do
8 is assess the risk after cleanup and I will
9 discuss more about that in a little bit. You
10 also have to identify pertinent regulations.
11 In the case of this cleanup, the regulation
12 that was pertinent was 40 Code of Regulations
13 or CFR 192. This is a regulation that implements
14 the requirements of the law, that law being the
15 uranium mill tailings, Radiation Control Act
16 of 1978.

17 You also have to, in addition to looking
18 at regulations, you have to look at other things
19 that may be considered. Again these other
20 things don't carry the same weight as your laws
21 and regulations but you still have to consider
22 them. Those other orders or guidance that
23 apply under the Department of Energy Order

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1 5400.5 that we have been talking about, also
2 a proposed regulation from the Department of
3 Energy, 10 CFR 834 and then the New York State
4 Technical Administrative Guidance Memorandum
5 or New York State TAGM that has again the very
6 conservative requirement for exposures and
7 identifying the intended land use is also
8 critical to that.

9 So, what I would like to do now is
10 kind of walk you through the process that was
11 used to develop the site-specific criteria. As
12 I said, the first thing that has to be done is
13 a risk analysis. After we clean up the site,
14 we have to make sure that the CERCLA risk
15 criteria are met and you can do that by using
16 some calculations to determine what your
17 allowable concentration of thorium is and when
18 that was done for this site, based on the
19 intended land use, after the cleanup you could
20 leave 114 to 123 picocuries per gram of thorium
21 and meet that requirement.

22 The next regulation that I talked about that
23 was important was 40 CFR 192. There are two

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1 requirements under that regulation. The first
2 being you have to limit radon exposure to less
3 than 0.02 working level and I'm not going to
4 describe what that means but that's the
5 requirement of the regulation. In order to do
6 that, it was calculated that the allowable
7 thorium concentration could be 55 picocuries
8 per gram.

9 The next requirement is limiting radium
10 to a certain level and that level is 5 picocuries
11 per gram at the surface and 15 picocuries per
12 gram in the subsurface. So, this is kind of an
13 important thing to note, that the DOE order
14 regulates thorium and radium. The regulation
15 only has a requirement for limiting the
16 concentration of radium and obviously that is
17 done because of the greater concern associated
18 with radium. When you look at the concentration
19 of radium, at that level, 5 and 15, you have to
20 clean up the thorium to 40 picocuries per gram.

21 One thing I want to note, that in the
22 modeling process, remember I told you earlier
23 that over time some thorium will decay to radium.

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1 It's important to note that that cleanup
2 criteria is protective. When we finish the
3 remediation, it's also protective over at least
4 the next thousand years. We model over a thousand
5 year period and found out what the worst case
6 would be to limit the concentration of radium to
7 those levels and the answer is, 40 picocuries per
8 gram.

9 The first criteria listed up there are
10 primary evaluation criteria and again those go
11 back to regulatory requirements that have to be
12 met.

13 Under the CERCLA process you also consider
14 other evaluations, criteria that they call
15 secondary evaluation criteria and one of those
16 is, the 10 CFR 834, the proposed DOE regulation
17 and the Department of Energy Order 5400.5. In
18 order to meet the stated intent of both of those
19 orders and that proposed regulation, which is
20 to limit the exposure to less than 30 millirems
21 per year, you can have an allowable thorium
22 concentration ranging from 139 to 543 picocuries
23 per gram and the final thing we looked at and

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1 perhaps one of the most important things in
2 order to meet our commitments to the community
3 was, what is the exposure level; how do we
4 control the exposure such that it's less than
5 the very conservative 10 millirems per year
6 required by the New York State DEC and when
7 those calculations were run based on the intended
8 land use, we found that we could have 46 to 181
9 picocuries per gram or thorium.

10 So, looking at all these criteria, what
11 we did is, we said we want to be very conservative
12 but we want to fully comply with the requirements
13 of CERCLA. So, in order to do that, we select
14 the lowest level that would allow for the most
15 cleanup under the site-specific criteria and that
16 became, that's for the 40 picocuries per gram
17 came from. So, it's based overall on limiting
18 radium to 5 and the surface and 15 at the
19 subsurface.

20 Another thing I would like to kind of go
21 over, I have been throwing around picocuries
22 per gram and millirems, it may be useful to kind
23 of give an example to explain what that means

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1 and kind of what may be the background exposure
2 is for any site. So, we'll start with off-site
3 exposure. What is your additional off-site
4 exposure due to this site either before or
5 after cleanup, really and the answer is really
6 zero. There is no exposure off-site associated
7 with this site. If there was, that would have
8 been cleaned up many years ago.

9 What is your exposure on site? Basically
10 looking at the 40 picocuries per gram, we ran
11 some scenarios that looked at what would be
12 the additional exposure on site as a result of
13 our cleanup and the answer was, five picocuries
14 per gram. That would be an average. It ranged
15 between, somewhere between I think two and
16 seven picocuries per gram and that would be the
17 maximum kind of average on site.

18 I am sorry, did I say picocuries per
19 gram? These are millirems. I'm sorry. That
20 is five millirems on site, millirems per year
21 on site.

22 The New York State guidance level which
23 again is the most conservative guidance out

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1 there, limits the additional exposure for any
2 source to ten millirems per year. That has to
3 be less than ten millirems per year.

4 The next requirement is the NRC, the
5 Nuclear Regulatory Commission guidance values
6 that says, again limiting your exposure to
7 any particular source has to be less than 25
8 millirems per year.

9 The last one is the DOE guidance which
10 really has a range of acceptable exposure from
11 somewhere around 30 up to 100 millirems per year
12 and again that's for a particular source.

13 So, the last thing I want to show you is,
14 what is the exposure at the site, at any site,
15 here, any place due to background and that's
16 the last item and basically that's sort of puts
17 it into perspective I think is that the background
18 exposure that all of us receive on a daily
19 basis throughout the year sums to about 360
20 millirems over the course of the year. If
21 you live in a place like Denver, it's a couple
22 hundred millirems greater than that and it could
23 be greater in other locations as well.

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1 So, that's sort of helps to put it into
2 perspective the numbers that we are talking
3 about and hopefully it shows graphically that
4 of all the regulatory criteria out there, our
5 proposed cleanup plan for this site is more
6 conservative than any of them.

7 So, to summarize, the remedy action that
8 the Corps of Engineers is proposing is
9 excavating and removal of the 40 picocuries
10 per gram, soils exceeding 40 picocuries per
11 gram of thorium 230 and shipping it off site
12 for disposal.

13 The benefits of that, again, hopefully
14 I have shown you why it's fully protective of
15 human health and the environment. It certainly
16 meets all of the relevant regulations and
17 guidelines. I walked you through how we met all
18 of those and it also meets the very conservative
19 New York State guidance value which was an
20 important criteria to the community. Also it
21 can be initiated in a timely manner. As the
22 Colonel mentioned, based on the comments to
23 this plan, we are prepared to start work even

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1 next summer and it's responsive to the
2 community concerns.

3 We heard what your concerns were. We
4 feel that they are incorporated in the proposed
5 plan.

6 Some of the milestones associated with
7 this, Ashland 1 and 2, the public comment period
8 ends January 9th. All of you hopefully know
9 that and will submit your comments before then
10 and depending on comments received, we will
11 issue a responsiveness summary which is basically
12 an answer to those questions and then issue a
13 record of decision which is a final decision
14 on the site after we fully have considered all
15 of the plans and all of the comments that come
16 in and again, remedial action at Ashland 2 could
17 start as early as the summer of 1998.

18 I will turn it over, back over to Colonel
19 Conrad right now for the question and answer
20 period.

21 COL. CONRAD: Now, what we will do right
22 now is allow about 15 minutes worth of questions
23 to, primarily to Dave to just allow some

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1 edification or some education on the
2 information that we received. Right now I have
3 got like 14 minutes until eight o'clock. I
4 would like to keep it until eight o'clock and
5 then we will take a break at eight, a ten-minute
6 break at eight and come back here and hear your
7 comments.

8 First we have a question here.

9 AUDIENCE MEMBER: What percentage of the
10 US around here exceeds this -- the question is,
11 what percentage of our country exceeds the 40
12 picocuries per gram?

13 COL. CONRAD: I don't have that
14 information unfortunately.

15 MR. CONBOY: Yes. I don't think we can
16 answer that, what percentage exceeds that. I
17 can tell you that on average the background
18 levels of these radiolnuclides and there is
19 background radiolnuclides in all our soil,
20 ranges somewhere between one and three picocuries
21 per gram and it's higher in some areas.

22 AUDIENCE MEMBER: My daughter lived several
23 years in an area which had very high radon.

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1 They discovered it sort of by word of mouth and
2 her husband brought home a radiation factor and
3 in the summer it was worse. So, they opened
4 all the windows and it helped.

5 Then they found out it reduced this level
6 by getting a cellar fan. So, that improved the
7 house quite a bit. Meanwhile, they bought a
8 radiation detector and put it up in the kitchen
9 somewhere and then they would walk down in the
10 cellar and turn the fan on, they would turn the
11 fan off and this thing would go off again.

12 So, there is an area in Pennsylvania
13 that is far worse than I think here but what
14 can you do, nothing, because the government
15 didn't put it there. It was there in the first
16 place and those people are stuck with it and
17 why do we spend so much money on that?

18 COL. CONRAD: All right, thank you.
19 Any other questions? Yes.

20 AUDIENCE MEMBER: I am referring to the
21 history of the sites. The word, low-grade
22 uranium is used there. Is the Corps not aware
23 that high-grade ore was processed, 65, ores

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1 from the Congo that contained 60 percent more
2 uranium?

3 MR. CONBOY: I think that we are aware
4 of that because some of the other sites that
5 we are responsible for cleaning up and
6 addressing are -- have those exact problems
7 that you mentioned. However, the indication
8 that we have is that the wastes that were taken
9 from Linde to this property were the lower grade
10 filter cake wastes.

11 AUDIENCE MEMBER: That is correct. However,
12 this raises a question I have about segmentation
13 of the review process. Is the Colonel aware
14 and the Corps generally aware that this is a
15 five property site and that remediation has
16 already been done at the Linde property which
17 is contaminated with high concentrations of
18 radium and cleanup criteria have been employed
19 there that are different from that being suggested
20 for Ashland 1 and 2?

21 COL. CONRAD: Yes, we are aware of the
22 ongoing activities at the Linde, cleaning up of
23 the Linde site as well. In fact, we are

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1 responsible for those cleanups of the Linde
2 site.

3 AUDIENCE MEMBER: Are those interim
4 actions, they are not final remediation?

5 COL. CONRAD: Those are, the cleanups
6 are going on right now at Linde.

7 AUDIENCE MEMBER: The proposed plan
8 indicates in the preamble that the decontamination
9 work at Linde will not be considered in the future
10 proposed cleanup action. Does that mean that
11 those decontamination actions which were previously
12 identified as interim actions, are now final
13 actions and where is the ROD for them?

14 COL. CONRAD: Are you referring to the
15 cleanup for Ashland 1 and 2?

16 AUDIENCE MEMBER: I am referring to the
17 decontamination at Linde.

18 COL. CONRAD: Well, I would prefer, Jim,
19 that we ask questions about the Ashland 1 and 2
20 and Seaway site because that's the purpose of this
21 meeting. So, I would ask you to --

22 AUDIENCE MEMBER: Well, it is relevant
23 because the whole environmental review process

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1 here is being subverted by dividing up these
2 sites.

3 COL. CONRAD: Then I would ask you to
4 ask questions relevant to the Ashland 1 and 2
5 and Seaway site, please.

6 AUDIENCE MEMBER: Are you going to address
7 this issue of segmentation that was raised by
8 the DEC previously?

9 COL. CONRAD: We are reviewing the
10 entire cleanup process and we are going to
11 continue with the cleanup of proposed plan of
12 Ashland 1 and 2 and Seaway. We are not going
13 to slow that process down, if at all possible.

14 MR. CONBOY: Right. There is nothing in
15 the CERCLA process that prevents you from
16 looking at different sites or doing operable
17 units associated with a bigger site and
18 basically there will be additional documents
19 that will document and confirm what our work is
20 associated with those other sites. In order to
21 completely comply with the CERCLA process on
22 these sites, we are doing a proposed plan and we
23 are doing the public comment period and then

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1 we will issue our decision on that.

2 AUDIENCE MEMBER: My understanding is
3 that that does not satisfy the requirements of
4 NEPA. This is not a NEPA review any longer.

5 COL. CONRAD: This is a CERCLA review
6 with NEPA requirements incorporated in the
7 CERCLA process.

8 AUDIENCE MEMBER: Well, that is a NEPA
9 requirement, is it not, being incorporated?

10 COL. CONRAD: Do you have any other
11 questions?

12 AUDIENCE MEMBER: Yes, I do. Is this a
13 public participation, a PR campaign or is it a
14 real program to involve the public in a
15 meaningful decision-making process as required
16 by NEPA?

17 COL. CONRAD: It is, it's exactly that
18 and what I'm trying to do is give other people
19 an opportunity to speak and I will allow you to
20 ask, after another question, I want to allow the
21 other people an opportunity to also ask other
22 questions.

23 AUDIENCE MEMBER: In this table, 1997

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1 description of options, the volumes listed are
2 42,000 cubic yards for option 2-A which is the
3 revised option. In the CANiT meeting in July
4 where this was presented by the DOE person,
5 a letter was presented by Commissioner Tobe
6 to the attendants that indicated that the
7 volume was 42,000 cubic yards for the previous
8 derivation of the guideline, the previous
9 approach to being employed. Are you familiar
10 with the difference? The blending was ruled
11 out, right?

12 MR. CONBOY: Right.

13 AUDIENCE MEMBER: That was the volume that
14 was identified under approach one, okay.

15 The September derivation of the guideline
16 indicates that approximately twice the volume
17 determined by the first approach would need to
18 be excavated under the second approach. Can
19 you explain the discrepancies? You are saying
20 now that there is 42,000 cubic yards under the
21 second approach and that was the volume under
22 the first approach and the second approach
23 indicated there would be twice as great. So,

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1 84,000 cubic yards by my calculations.

2 MR. CONBOY: Right and that is not the
3 understanding that I have. You can submit that
4 in writing, we can take a look at it but one
5 of the things that is important, Jim and I tried
6 to bring it out in the presentation, was that
7 we are not --

8 AUDIENCE MEMBER: Perhaps the commissioner
9 can shed some light on that.

10 MR. CONBOY: Well, could I answer your
11 question? Could I answer the question?

12 AUDIENCE MEMBER: He's the one that
13 presented the letter and you withheld the second
14 page of the letter that indicated the amount.
15 The question on the amount, we question the
16 amount of that criteria would generate and when
17 we got the second page, it indicated 42,000 cubic
18 yards.

19 MR. CONBOY: Again, that is something we
20 can clarify if you have some confusion about
21 that.

22 AUDIENCE MEMBER: I certainly do.

23 MR. CONBOY: But what is important to

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1 understand is that any cleanup that we do will
2 not be to remove 42,000 cubic yards or 84,500 or
3 50,000 and leave. Our criteria is going to be,
4 do we meet the protection of human health and the
5 environment and applicable laws and regulations.
6 When we do that, whether it's more than that or
7 less than that, then we will determine that our
8 remedial action is complete.

9 So, I think that's the important thing to
10 take away from that.

11 COL. CONRAD: Do we have any other questions?
12 The floor, yes.

13 AUDIENCE MEMBER: How is the waste
14 classified for handling, transport and disposal
15 purposes? Is that 11 E-2 or low-level rad waste?

16 MR. CONBOY: That's a good question and
17 that's something that we are looking at right now
18 and we are doing some characterizations to
19 determine how it would be categorized for disposal.
20 Right now I believe it is categorized 11 E-2
21 waste but we are looking at the total profile
22 of the waste to see if there may be some
23 alternative way to profile it. Our intent

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1 ultimately is to ship it off site in a legal
2 manner and dispose of it in a legal manner and
3 also cost-effective. So, if there is a better to
4 way to dispose of it by calling it something
5 else, properly under the law, then we are certainly
6 looking into doing that.

7 COL. CONRAD: Question in the back.

8 AUDIENCE MEMBER: I notice that the word
9 "interim" is not used anywhere in any of this
10 program so far. Does this indicate that this is
11 now possibly going to be a final like they did in
12 Lewiston? Suddenly that word interim has
13 evaporated.

14 MR. CONBOY: As far as I know, there was
15 never a proposal that was an interim action to
16 the Ashland 1 or the Ashland 2 properties. The
17 remedy that we have put before you is a final
18 remedy and again it's fully protective of human
19 health and the environment, meets our
20 commitments to the community and complies with
21 all laws and regulations.

22 AUDIENCE MEMBER: All right. I disagree
23 with that but I will send that to you in writing.

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1 Are transcripts available and how do we
2 get them?

3 COL. CONRAD: They are available. I don't
4 know, probably the best thing there, Don, is to
5 talk to the Public Information Center and start
6 there but they will be available.

7 AUDIENCE MEMBER: Two other quick things I
8 just want to touch on. There was a study just
9 completed at the Rockadyne out in California and
10 they found out that long-term exposure to low-level
11 radiation is a heck of a lot worse right along and
12 that is not -- there is a time factor that takes
13 place and that's another thing to talk about, the
14 latent period for cancer due to exposure to
15 low-level radiation. It's 20 to 30 years. Over
16 at Linde, I used to work there it's now called
17 Praxair, I don't know about the residents that
18 live here in Riverview, I heard but our data base,
19 I got 108 cases of cancer. I just wanted to make
20 somebody aware of that. We disagree with a lot
21 of what is being said.

22 COL. CONRAD: Thank you, Don.

23 MR. CONBOY: I would just like to address

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1 that because I am familiar with some of the studies
2 that you pointed out and we have reviewed them.
3 One thing that is important to note is that in
4 the discussion of those studies of low-level
5 radiation, they are talking about exposure on the
6 order of 1,000 to 5,000 to 10,000, even greater
7 millirems per year. So, that's how they are
8 quantifying low-level radiation. They are not
9 talking about five, four or three or two millirems
10 per year. They are talking about exposure over
11 a thousand times greater than we are talking
12 about here. So, I think that is important
13 information to put out.

14 AUDIENCE MEMBER: Would you do me a favor
15 and put that in writing?

16 MR. CONBOY: That will be in writing. It's
17 in the transcript.

18 AUDIENCE MEMBER: Thank you.

19 COL. CONRAD: Any other questions? We have
20 a few minutes. Yes.

21 AUDIENCE MEMBER: What land use scenarios
22 were considered in the risk assessment and secondly,
23 what exposure pathways are assumed in the DEC's

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1 guideline, the TAGM guideline number?

2 MR. CONBOY: Okay. The exposure scenarios
3 that were looked at were basically industrial and
4 commercial and construction workers out there on
5 site putting in a building. The exposure pathways
6 that were considered in the New York State DEC
7 TAGM, I will have to take that question in writing
8 and get an answer back to you. I know that the
9 model that was used is the standard in the
10 industry, the health/physics community. It's
11 called RESRAD and so that was used and it was
12 used in coordination with the state and also the
13 health/physics consultant for one of the
14 stakeholder groups. So, it wasn't done in a
15 vacuum. How it was applied to this site was done
16 with a lot of interaction and a lot of changes.
17 As Jim mentioned, one of the changes that came
18 out of that is how some of the cleanup would be
19 done. So, it was done again with a lot of
20 interaction and using standard procedures.

21 COL. CONRAD: Any other questions? Yes.

22 AUDIENCE MEMBER: Could you put that slide
23 back up there with the millirems on there for

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1 me, please where you stepped it? Now, the one,
2 two, three, four, five, that is added onto the
3 last one that is at the top, is that correct?

4 MR. CONBOY: Absolutely. That is correct.

5 AUDIENCE MEMBER: So you are actually being
6 exposed to more.

7 MR. CONBOY: Yes.

8 AUDIENCE MEMBER: Okay.

9 MR. CONBOY: I guess on average you would
10 say 365 but again the natural variation at
11 different locations.

12 AUDIENCE MEMBER: But that is added on top
13 of the last one.

14 MR. CONBOY: Yes.

15 COL. CONRAD: Jim.

16 AUDIENCE MEMBER: Talking again about the
17 establishment of site-specific guidelines, if you
18 could get that page up, Sarah. The only one under
19 pertinent regulations that is identified, that's
20 the one, the only one identified is 40 CFR 192.

21 MR. CONBOY: That is right.

22 AUDIENCE MEMBER: Is the Corps not aware of
23 10 CFR 40, the NRC regulation pertaining to

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1 formerly utilized uranium mill tailing sites?

2 MR. CONBOY: Right. That is sort of what
3 we incorporated at the end with the exposure
4 limit, I believe that is less than 25 millirems
5 per year. So, although it was considered, I
6 mean, we basically exceed that in the cleanup.

7 AUDIENCE MEMBER: Let me just tell you then
8 what I know. 10 CFR 40 is applicable, okay. The
9 NRC regulations in 10 CFR 40 are applicable. The
10 25 millirem guideline is from a recently passed
11 regulation that does not apply to uranium mill
12 sites. It specifically is excluded from uranium
13 mill sites. The feeling being at NRC that the
14 uranium mill sites were already covered by
15 existing NRC guidance and that guidance is
16 10 CFR 40 and a branch technical position. The
17 branch technical position required cleanup to a
18 10 picocuries per gram level for total uranium,
19 which converts to five picocuries of thorium, five
20 picocuries of radium. That is the applicable
21 law and I just question, is the Corps aware that
22 that is applicable law?

23 MR. CONBOY: I think --

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1 AUDIENCE MEMBER: I would like an answer
2 from the Colonel.

3 COL. CONRAD: Jim, we have reviewed all the
4 applicable regulations here for this cleanup and
5 we feel like we have captured that on the document.
6 I am familiar with the ones that were shown here
7 on the slide. I'm not familiar with the,
8 personally familiar with the CFR you just
9 quoted. So, I will have to go back and read that,
10 okay.

11 Are there any other questions before we take
12 a break?

13 (No response.)

14 What I would like to do now is take a
15 ten-minute break and we will convene back at
16 8:15 for the public comment period. Thank you.

17 (Proceedings recessed for ten minutes.)

18 COL. CONRAD: Please take your seats for the
19 comment period, please. A little discussion on
20 the ground rules again, we will try to limit your
21 discussions to five minutes and one person at a
22 time. I have the cards here and I will go through
23 them on the first-come, first-serve basis on

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1 speaking.

2 As we first started the program about 65
3 days ago, I happened to be in Congressman
4 LaFalce's office and updating him on other
5 Corps projects and he is the one that mentioned
6 FUSRAP for the first time. I didn't know anything,
7 what he was talking about and he quickly got me up
8 to speed and let me know some of the people that
9 are involved in the process and one of the people
10 that has been involved in the process from the
11 very beginning is here tonight representing
12 Congressman LaFalce. I would like to start off
13 with Ms. Mary Brennan Taylor representing
14 Congressman LaFalce.

15 MS. TAYLOR: Thank you, Colonel.
16 Congressman LaFalce is in Monroe County this
17 evening and won't be with us but asked me to
18 represent him.

19 First I wanted to thank you, Colonel
20 Conrad and your very capable staff for making
21 the transfer of responsibility from the DOE to
22 the Army Corps smooth and positive. Your
23 responsiveness and sense of urgency have been

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1 greatly appreciated.

2 In representing Congressman LaFalce this
3 evening, I can report that he is pleased that
4 before the transition of responsibility occurred,
5 the Department of Energy revised its proposed
6 plan for the cleanup of the Ashland 1 and 2
7 sites. This permanent solution for cleanup of
8 radioactive contaminants will permit future
9 land use as defined in the 1992 Town of Tonawanda
10 waterfront development master plan.

11 Congressman LaFalce thanks the community
12 for working closely with him to assure this
13 positive result. I want to take this opportunity
14 to say how rewarding it has been for him and
15 certainly for me to work on this issue. Federal
16 and local government officials and the community
17 have been very responsive and to the benefit of
18 all of us.

19 I remember when I first began covering
20 environmental issues, the congressman told me
21 how important it was to involve federal officials
22 directly at all of our sites. In the 1970s, the
23 DOE officials toured and inspected the Tonawanda

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1 site and took steps to insure the health and
2 safety of the public was protected. Having been
3 to the site, they understood in the eighties
4 why the DOE staff proposal to move waste from
5 Colonie, New York to the Town of Tonawanda was
6 totally unacceptable.

7 When Congressman LaFalce included language
8 in a conference report to prevent the movement
9 of low-level radioactive waste within New York
10 State to the Town of Tonawanda, the DOE again
11 understood and agreed to follow that position.
12 Now in the late 1990s, the DOE and now the US
13 Army Corps of Engineers fully understands why our
14 government officials and this community want
15 excavation and removal as a long-term solution.

16 Congressman LaFalce looks forward to
17 continuing to work very closely with federal
18 officials, in particular with Lieutenant Conrad
19 and his staff on this and other issues important
20 to this community and I look forward to continuing
21 working with all of you as well.

22 Thank you very much for this opportunity.

23 COL. CONRAD: Next representing New York

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1 State Department of Environmental Conservation,
2 Mr. John Mitchell.

3 MR. MITCHELL: Hello. My name is John
4 Mitchell and I am an environmental radiation
5 specialist with the New York State Department
6 of Environmental Conservation.

7 We are currently reviewing the US Army
8 Corps of Engineers' proposed plan for Ashland
9 1 and 2 and in principle the department has
10 agreed to the use of site-specific cleanup
11 guidelines at other sites and we appreciate
12 the Corps opportunity to review and comment on
13 this document and the department will be
14 submitting written comments before January 9th,
15 1998. Thank you.

16 COL. CONRAD: From Erie County, Mr. Charles
17 Swanick.

18 MR. SWANICK: Thank you, Colonel and just
19 to say welcome to Tonawanda and welcome to FUSRAP.
20 This brings us up to date. For us as the
21 elected side, this is a ten-year effort. Almost
22 ten years to the day we met with the Department
23 of Energy in a very confrontational meeting

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1 where they proposed to leave all of the
2 radioactive material that is now present here
3 in the Town of Tonawanda, to create a radioactive
4 depository right on site along the waterfront
5 and they also proposed to bring radioactive
6 material from Colonie, New York to the Town of
7 Tonawanda as a permanent disposal site.

8 That was the beginning of the relationship
9 with the DOE and for ten years it has been very
10 difficult, very strained and ended up with the
11 creation of an elected group of people both from
12 the Town of Tonawanda, the County, the City of
13 Tonawanda and Grand Island, the state and
14 federal officials to work collectively on one
15 object and that was to insure the radioactive
16 material that was brought here about 50 some
17 years ago in the creation and building of a
18 nuclear bomb, that that material be removed
19 from our community and it be removed to a safe
20 authorized nuclear depository in the country.

21 The good news, in ten years we have three
22 sites now in the country that can take this
23 material and one of the sites is being proposed

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1 for the disposal of this material.

2 We need to move forward with this cleanup
3 project. It has been too long in coming. There
4 has been too much of a fight over the cleanup
5 itself from going with the disposal on site to
6 total removal to a standard that just doesn't
7 meet the waterfront use of the Town of Tonawanda.
8 We believe that the Army Corps of Engineers has
9 a proposal which meets the needs of the Town of
10 Tonawanda, the people of the Town of Tonawanda,
11 the City of Tonawanda and all of us in Western
12 New York. We need to get that material out and
13 we need to get it out now.

14 This is federal money that is coming
15 through the efforts of John LaFalce. It is
16 federal dollars coming into our community to be
17 used for cleanup purposes, to clean up a
18 problem that we have nothing to do with.

19 Most importantly on the standard as you
20 have seen, the standard will meet the use site
21 plan of the Town of Tonawanda which is light
22 industrial. It will allow that land to be
23 developed appropriately. It will allow for the

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1 waterfront to begin to expand and grow in the
2 Town of Tonawanda and it will add to what the
3 county has done with Isleview Park and the
4 Riverwalk. This is a very positive step that
5 to be honest with you I'm not sure I would ever
6 see. Ten years on one issue is a long, long
7 time and we went from nowhere to now a
8 commitment of at least \$72,000,000 in federal
9 funds to clean up this issue.

10 For all of us from the elected side and
11 you will hear from other elected officials and
12 I am speaking on behalf of my legislative district
13 which this site is located in, for the people
14 of Grand Island who I represent as well as the
15 people in the City of Tonawanda, we are ready to
16 proceed with the cleanup. We accept the proposed
17 plan that you are offering, Colonel and we wish
18 you quick speed in getting this task underway and
19 getting this material out of our community.

20 Thank you.

21 COL. CONRAD: Next representing Erie
22 County, Mr. Richard Tobe.

23 MR. TOBE: Thank you. I am sure I speak

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1 for all of us in commending you, Colonel Conrad
2 and Mr. Conboy for the most clear and concise
3 and understandable presentation we have ever had
4 on the subject. So, whether you agree or
5 disagree, thank you for a terrific job in laying
6 this out.

7 My name is Richard Tobe. I'm Commissioner
8 of the Erie County Department of Environment
9 and Planning. Excuse my voice, I'm not well
10 tonight but I am here in that capacity and Dennis
11 Gorski's behalf, the County Executive and I am
12 also Chairman of CANiT which you have heard about.
13 It's a federation of 13 elected officials. So,
14 my statement is really on behalf of CANiT and the
15 others.

16 It is with a great sense of relief that
17 I stand here to comment upon the proposed
18 cleanup of the waste plant. We are finally
19 moving.

20 First though, I want to welcome the
21 Buffalo District Office of the US Army Corps
22 Engineers to this effort. I can't but believe
23 that the transfer of responsibility from US DOE

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1 at Oak Ridge, Tennessee to 1776 Niagara Street
2 in Buffalo, New York will have a very
3 substantial impact on this process. We are sure
4 that our concerns will be your concerns. You
5 understand, as we do, the importance of the
6 Niagara River and the Great Lakes to the United
7 States and the world. You understand our fears
8 about high community cancer rates and our
9 school children are your school children. So,
10 welcome.

11 It has been ten years since we first became
12 involved in cleanup efforts of the Tonawanda
13 sites. The FUSRAP program itself is 23 years
14 old. After all this time, they are finally seeing
15 a profound shift from study, planning and
16 discussions and all too often inaction and delay,
17 to one of action.

18 Winston Churchill commenting on recent
19 Allied victories at Stalingrad and ElAlemein,
20 after three years of World War said, "This is
21 not the beginning of the end, but perhaps this
22 is the end of the beginning."

23 I think perhaps for us too, that's where

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1 we are. We are finally turning the corner and
2 about to see action but we have a ways to go yet.

3 The Coalition Against Nuclear Materials in
4 Tonawanda, CANiT, was formed in 1988 initially
5 for the purpose of preventing contaminated
6 waste coming from Colonie, New York to Tonawanda.
7 It took federal law introduced and passed by
8 Congressman LaFalce to prevent that. Since then,
9 CANiT has remained active and has had a series
10 of what we consider victories as we have both
11 seen and monitored the program.

12 As the Chairman of CANiT tonight, my
13 statement tonight I think reflects the position
14 of the elected officials on the part of CANiT
15 but obviously some of them have and will speak
16 for themselves.

17 For your records, I have submitted for
18 tonight's testimony, my testimony on behalf of
19 CANiT at the US DOE public meeting held in
20 December of 1993. You already have it there
21 and I'm not going to paraphrase my testimony as
22 the written statement does but suffice as to say,
23 we strongly opposed, did not want it still in

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1 Tonawanda. We wanted the waste out and we would
2 not accept anything but that.

3 CANiT has been steadfast in that goal. We
4 have not wanted encapsulation of waste here.
5 We want the stuff to be removed and we want all
6 of that to be done so as to protect the health
7 and safety of the residents.

8 CANiT has insisted that the most stringent
9 human exposure limitation would be used, that
10 was the US DEC guidelines. The New York State
11 guidelines which was discussed earlier and in
12 the slides, was ten millirems which is way, way
13 below what has been previously established as the
14 standard and is now or is about to be the most
15 protective standard now introduced in the United
16 States.

17 We understand that several federal agencies
18 are considering standards between 25 and 10
19 millirems and we are pleased that this site,
20 the millirem standard will be used.

21 We understand that the Corps' comment that
22 it may not be willing to accept that standard
23 for general applicability across the country

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1 but we are pleased that they are willing to apply
2 it to our site, regardless of what precedent
3 may be set elsewhere.

1.3.2 | 4 CANiT has also taken the position that
5 all material excavate must be shipped off site.
6 We will not accept and the Corps has agreed,
7 that there will not be any form of mixing or
8 blending that will lead to dilution and the
9 possibility of material, radioactive and pulled
10 out of the ground being diluted by mixing staying.
11 We will not accept that and the Corps has agreed
12 and all soils that are excavated will be removed
13 from the site and sent elsewhere, out of Tonawanda,
14 out of Erie County.

1.3.3 | 15 We also believe no credit should be given
16 for the application of fill over the site for
17 determining whether or not human health standards
18 are achieved. In that context, with this site
19 being returned to unrestricted use, the clean
20 fill that will be used cannot be taken as credit
21 and of course we agree with that also. We are
22 pleased with that and as was stated and the
23 Corps has agreed with this, that any material

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1.3.4
1 that is used for backfill, grading and changing
2 the contour at the site after excavation will
3 be clean fill and that it cannot be in any
4 way contaminated soil.

5 With those caveats, CANiT does strongly
6 support this proposed plan, passed a resolution
7 to that effect earlier this year in July and we
8 hope and expect that when this process is
9 completed, you will have a record of decision
10 issued, that the Corps will be prepared to
11 maintain the schedule that is laid out and
12 commence the process of removing the radioactive
13 wastes from Tonawanda next year as soon as the
14 weather permits and as soon as the contracts are
15 let.

1.4
16 With that, just two more quick comments,
17 we do expect that we will be reviewing all
18 technical documents after they are prepared for
19 human health and safety and the safety of the
20 workers. We hope the Corps will continue with
21 what the DOE did for us, which is to allow us to
22 have technical assistance, made available to us
23 through a grant and allowed us to engage a

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1 consultant who reviewed these documents and
2 who will be available to help us review the
3 technical documents that will follow.

4 My final comment is to just urge the
5 Corps to work with, when they develop the health
6 and safety and spill prevention and control
7 countermeasures plan to work with all the
8 first responders in Erie County through our
9 office of emergency response to make sure that
10 those people may be called upon to go to an
11 accident or spill related to transportation
12 primarily, are up to speed and understand what
13 the issues are that they might confront.

14 But with that, we say, let's get going.
15 Thank you, very much.

16 COL. CONRAD: Representing the Town
17 of Tonawanda, Carl Calabrese.

18 MR. CALABRESE: Thank you, Colonel.

19 Ladies and gentlemen, my name is Carl
20 Calabrese and I am Supervisor of the Town of
21 Tonawanda and a member of the Coalition Against
22 Nuclear Waste in Tonawanda, otherwise known as
23 CANiT.

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1 I would like to make a few brief remarks
2 tonight on behalf of the entire town board and
3 the residents of our town. CANiT and our
4 entire town board is officially on record in
5 favor of this cleanup plan before us tonight.
6 This community has suffered with this problem
7 for decades and has been frustrated with the pace
8 of the federal efforts to resolve this issue. We
9 have seen million of dollars spent on studies
10 that seem always to recommend the need for more
11 studies.

12 CANiT is opposed with one bipartisan voice
13 the idea of permanent restoring these wastes
14 along our waterfront. Earlier this year the US
15 Department of Energy put before us a new plan.
16 This plan would clean up our town so that our
17 entire waterfront master plan could be
18 implemented. All federal and state safety
19 standards would be met and contaminated material
20 would be removed and sent to an out-of-state
21 storage facility that was both licensed and
22 permitted to accept such waste material. With
23 this plan, we finally had a workable and common

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1 sense solution to dealing with this material
2 and allowing us to begin the development of a
3 very valuable area of our town.

4 For these reasons, CANiT, the elected
5 representatives of this community have given its
6 unanimous approval to this plan.

7 Now, I realize that there will always be
8 some people who will argue that this cleanup
9 plan is not clean enough. They would argue that
10 we should clean these sites to what is called a
11 resident farmer scenario. Briefly this standard
12 would assume that this land would be used for a
13 totally self-sufficient farming operation, in
14 other words, a farmer would eat nothing but the
15 crops and livestock raised on the farm and he
16 would wash it all down with well water taken from
17 the land.

18 Given that this land has never been and
19 will never be zoned for farming and there is
20 probably no such thing as a totally
21 self-sufficient farmer anywhere in the modern
22 world and that our town has its own municipal
23 water supply, this scenario is both impractical

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1.6.2

1-6.2 (cont)

1 and unrealistic.

2 What we are supporting tonight is a
3 practical plan that would protect real people
4 from real problems, as opposed to hypothetical
5 people from hypothetical problems. It will meet
6 all federal and safety standards and allow us
7 to fully implement our waterfront plan.

8 Finally, I'm very pleased that the Corps
9 of Engineers has now jurisdiction over the
10 cleanup and has agreed to the plan and to the
11 accelerated timetable that was originally
12 developed by the Department of Energy. The
13 Corps under the leadership of Colonel Michael
14 Conrad has committed to a speedy cleanup that
15 will actually see removal of this material by
16 the fall of 1998. This is good news for a
17 community that has worked so long and fought so
18 hard to see this material removed from our
19 landscape.

20 The town board and CANiT stand ready to
21 assist the Corps in its efforts. We look forward
22 to waving goodbye to this waste as it leaves our
23 town next year and in conclusion, I would like to

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1 thank and recognize my colleagues on CANiT. We
2 are a diverse group of elected officials, often
3 known for arguing with each other across
4 partisan lines. That never entered this
5 equation. From day one of CANiT's existence
6 this community through its elected officials,
7 republican and democratic alike, spoke with one
8 voice and one voice only, get it out, clean it
9 up, accept responsibility for it and just take it
10 away and store it in a proper facility and I
11 especially want to recognize the efforts of
12 Rich Tobe who has served as our chairman and
13 done that very, very well.

14 Thank you, very much.

15 COL. CONRAD: Also representing the Town
16 of Tonawanda, Mr. Ray Sinclair.

17 MR. SINCLAIR: Thank you. First of all,
18 it wasn't my intention tonight to come down and
19 say anything. I just wanted to listen but as
20 I sat here listening to what was going on, I
21 had some thoughts, particularly on the CANiT
22 function and the function of the citizens in this
23 town and a lot of things that I'm going to say

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1 very quickly have already been said but I think
2 it's worthwhile, I guess I am the lowest of the
3 elected officials involved in this. We have had
4 congressmen and state senators and assemblymen
5 and the county executive and the town supervisor,
6 county legislators and I'm just one of the grunts
7 down there but this has been a concern of mine
8 for the last ten years both as an elected
9 official of the town and also working for the
10 New York State Senate. And I would just like to
11 let you kind of know that, you look out here
12 and the vast majority of people I see in this
13 audience have not been involved very much in
14 this. Some of us, both as parts of CANiT and
15 individual citizens have been involved far more
16 than they wanted to be and maybe far more than
17 we should have been but again, there is a
18 sincere effort to do some good here.

19 We did see in the beginning of this thing
20 some bumbling, wondering, intimidating, force
21 it down your throat activity. Over the period
22 of time, the citizens stood up. They did at
23 Lexington, they did in the Town of Tonawanda and

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1 we got their attention and it's been a long
2 battle, ten years but we are now getting to the
3 point where we are coming to a meeting of the
4 minds and hopefully and meeting that is going
5 to be scientifically appropriate and safety-wise
6 appropriate for our people.

7 We just -- a lot happened when it first
8 began and caught us all, we were blind-sided.
9 I think the guys that set up that meeting that
10 night, we were just about knocked off our seats
11 and then we started talking about it and decided
12 that we had to do something about it and as I
13 just pointed out, we joined together as primarily
14 elected officials because these are the people
15 that you put there to defend you. They are the
16 ones that you expect to do the public will, to
17 take care of things and as a group, the public
18 officials accepted this.

19 Now, I will tell you, even if I were, I
20 would have admired them and being a member and
21 close to them, I admire them even more because
22 what we don't like to have is looking out in the
23 audience and half the people are against you

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1 already, no matter what you do but this group
2 of officials had the guts to stand up, concerning
3 this issue, make it stick, make them listen to
4 us and hopefully work out some kind of a
5 solution. Our one purpose of this bipartisan
6 group has get it out of here, period and we have
7 really not compromised at all in this and I think
8 this is a tribute again to the input of our
9 citizens. We have many public meetings at
10 various stages of this and just you people who
11 are here tonight, people came out and gave their
12 opinion. You may not agree with me and I may
13 not agree with you. We didn't always agree on
14 anything but as it came down, we were heard.
15 As a result of us being heard, we had action is
16 what this democracy is about and I'm very proud
17 that we as a town took this stance and I'm proud
18 to be a part of the CANiT organization.

19 We worked to protect the people. We pick
20 up the garbage, we make sure the water is clean,
21 the toilets are flushed and we also work to make
22 sure that nuclear wastes are not dumped on our
23 waterfront here and become a hazard to our

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1 people and I think we need to keep this in mind.

2 My purpose again was simply to outline
3 what CANiT is from a private standpoint. What
4 it is and what it was, what it's going to do. I
5 think I'm also quite pleased and shocked that the
6 Corps of Engineers has been able to pick the ball
7 up on this quickly because when we first heard
8 a year or so ago that this might happen, we
9 thought here we go again, another ten years,
10 going in circles but luckily our wagon circle
11 stayed solid and this community has stood and
12 stood firmly and although internally we have had
13 some disagreement on this, we are going to have
14 more of it but we stand as a community. Our
15 word to the Government of the United States is,
16 this is your waste, take it, get it out of here,
17 give us back our land.

18 Thank you.

19 COL. CONRAD: Representing For A Clean
20 Tonawanda Site, this is Jim Rauch.

21 MR. RAUCH: I am a representative of a
22 government-recognized stakeholder group For A
23 Clean Tonawanda Site. We have been following

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1 this thing, this cleanup issue for the past five
2 years. So, it's going on five years now and
3 as I tried to point out earlier, what really
4 is at issue here is future land use, okay. The
5 politicians have all sold out the future
6 residents of the town to these contaminated
7 properties. Because this is an area that
8 attracted people because of the natural asset
9 and will continue to do so, it's an area where
10 people will live, will build houses in the future,
11 I don't care what the town plan is to be. If it's
12 for like commercial, industrial, okay, that isn't
13 the issue. The issue is, this material has a
14 hazard of over 500,000 years. That's the issue.

15 Now, are we going to protect future
16 generations or not or are we going to continue
17 to allow this stuff to get out into the
18 environment, raise the background level and we
19 are all going to suffer statistical and increased
20 health effects.

21 That is what the issue is about all the
22 nuclear waste issues confronting the country
23 today and that is why the US Nuclear Regulatory

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1 Commission and regulations governing cleanup
2 sites like Tonawanda, has set much more stringent
3 standards than the politicians, the DOE and the
4 Army Corps are willing to accept.

5 Now, I'll just read a section from the
6 Branch technical position. This pertains to
7 natural uranium ores such as found at Tonawanda
8 including radium 226 and its daughters. They
9 are not included in the options such as being
10 considered here tonight that would allow 40 or
11 50 picocuries of thorium, concentration of 40 to
12 50 picocuries per gram of thorium to be left on
13 site and their wording is exactly this, natural
14 uranium ores are not included because of possible
15 radon 222 emanations and result in higher than
16 acceptable exposure of individuals in private
17 residences if houses were built over buried
18 materials.

19 That is really the issue here. The NRC
20 is applicable to this site. They have not stepped
21 up to the plate to this date and at this site.
22 We intend to see that they do because their
23 regulations will protect future users and next

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1 year Carl Calabrese could be approving a condo
2 development down there on the waterfront or
3 five years from now or whatever. That's a simple
4 fact and that's why the NRC does not allow
5 institutional control. It requires free release
6 to require a more stringent cleanup and free
7 release means, any future use.

8 Carl eloquently said, well, let's get real.
9 Well, let's get real, folks. As go these
10 properties, so go the rest of the planet. That
11 is what we're dealing with here. If we let it
12 keep going up here and say oh, it's okay, it's
13 only going to be used in industrial now, right,
14 well Carl has already written off the ground
15 water. People on Two Mile Creek Road used to
16 drink water from these wells. Now they don't.
17 They use the water to water the garden and wash
18 the car, okay.

19 Are we going to always assume that we
20 are going to have clean public water? Well, we
21 have written off the ground water at this site
22 or Carl has. Has the rest of the public? That's
23 our question. We haven't.

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1 We raised these issues with the former
2 DOE in many letters. We identified them and
3 since June of 1996 there were no public meetings.
4 This plan has been cooked up, was cooked up by
5 the politicians and DOE without any public
6 meetings until this past summer when the
7 proposal was released publicly. We raised this
8 issue repeatedly and it's fallen on deaf ears.

9 The Colonel said in his opening remarks,
10 the Corps is a can-do outfit. We have been given
11 a budget, we are going to do it within the budget.
12 We don't care, you know, paraphrasing now, we
13 are going to do it within the budget irrespective
14 of whether it meets the requirements of existing
15 regulations and these are the NRC regulations.
16 That's what he has been told to do and as a good
17 soldier, he is going to do it if we don't stand
18 up and say let's have the required, lawful,
19 thorough cleanup.

20 We are only looking at several million,
21 maybe twice as much money being spent to do a
22 lawful cleanup, okay, instead of 38 million we
23 might be looking at 90 million or 70 million,

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1 okay. We are looking at 500,000 years of
2 exposure. People are going to live on these
3 properties and are going to get increased rates
4 of cancer in the future, increased health care
5 costs. Health care costs are a big issue, you
6 know, you look at the causes, more and more people
7 are realizing there are a lot of causes of health
8 care costs are environmentally induced.

9 Thank you.

10 COL. CONRAD: Mr. John Hennessey.

11 MR. HENNESSEY: Thank you, Colonel. I am
12 a resident of the town, also work for the DOT,
13 worked for the DEC. If there is an oil spill,
14 I'm there. When we had a spill, I cleaned it up.
15 I guess I'm concerned about this. I live in the
16 area. I have family that lives here. I think
17 that you should clean this up. You have got the
18 money. People have gone to work to provide the
19 money to clean this up and I think that as
20 everybody said and I have been here for ten years,
21 working with CANiT and the rest of the people,
22 I say clean it up. Get it out of this area.

23 We had a proposal to leave it here and it

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1 was rejected. I worked at Ashland a long time
2 and I spent a lot of time working there. They
3 took care of my material that I picked up and
4 dewatered it, things like that and I say for my
5 kids, my grand kids, I said I can't stand this
6 any more. You have got the money. You have got
7 the money. Let's clean it up and get it out of
8 here and thank you for your time.

9 COL. CONRAD: Mr. Ralph Krieger.

10 MR. KRIEGER: Good evening, ladies and
11 gentlemen. I am one of the members of the
12 F.A.C.T.S. organization that has been instrumental
13 in trying to work with getting waste out of the
14 Town of Tonawanda. However, this does not concern
15 the Town of Tonawanda. You happen to be sitting
16 on an international border and you have a joint
17 commission that oversees those waterways. I
18 just want to know, has anybody checked with the
19 joint commission on how much we should leave here
20 and how much we should take out, because your
21 Great Lakes are in great danger from contamination,
22 now not only from nuclear, chemical, biological,
23 they are in serious trouble. You are on the

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1 forefront, each and every one of you. You are
2 responsible citizens. You vote. It is our
3 obligation to the future generations of this
4 world to try to clean it up.

5 God knows if we will ever achieve that goal
6 and at what costs.

7 But we are the keepers now and it's our
8 obligation to do that and I will continue to work
9 with F.A.C.T.S. to see that it's done correctly.
10 Thank you.

11 COL. CONRAD: Ms. Kathleen Sullivan.

12 (No response.)

13 COL. CONRAD: Ms. Francine Dole.

14 MS. DOLE: I think it's important that
15 everybody be aware when the site is cleaned up
16 of how often it will be monitored for the people
17 that are working there as well as the people
18 in the general public because I know there has
19 got to be a threshold there that is dangerous
20 for the workers and the people as far as dust
21 and air contamination and I haven't heard that
22 issue brought up tonight.

23 COL. CONRAD: Mr. Frank Lee.

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1 MR. LEE: I guess I'm the only one that
2 opposes this. We are spending a great deal of
3 money to accomplish very little. If we were
4 to dump that whole deposit there into the Niagara
5 River at the rate of two percent every month,
6 that would bring the radiation level of the
7 Niagara River up to average.

8 Now, if we spent this money to save lives,
9 consider it, if we borrowed this money at six
10 percent it's going to cost us about, let's see,
11 \$30,000,000 for every life we save or whatever it
12 is.

13 Now, we can save a lot more lives with a
14 lot less expense if you want to spend the money
15 somewhere else. You get free taxi service to
16 drunks, you would save \$17,000 a year. So, if
17 you can save a life for \$300 if you want to do
18 it. However, the people, you can save the lives
19 for \$300 don't speak very loud. There are
20 children in far away countries that could use
21 inoculation.

22 All right. We are willing to spend a great
23 deal of money on something which is treated much

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1.12 (cont)

1 like asbestos. It's blown all out of proportion.
2 We could solve this problem very simply in the
3 beginning by building a park on top of that
4 stuff, all right, nobody would be there very long
5 and the radiation level in the park, I think the
6 figures I have seen would be three percent above
7 normal and that is quite small for here, much
8 smaller than the people that I mentioned in
9 Pennsylvania.

10 So, if you want to get some bang for the
11 buck, you can do a lot better elsewhere.

12 COL. CONRAD: Representing For A Clean
13 Tonawanda Site, Mr. Don Finch.

14 (No response.)

15 COL. CONRAD: I will move on to Thomas
16 Schafer also representing the F.A.C.T.S. group.

17 MR. SCHAFER: I can still ask questions, Carl?

18 COL. CONRAD: We would prefer right now,
19 if we finish shortly we will have some questions
20 and answers that we can handle at the end of the
21 meeting.

22 MR. SCHAFER: Okay. I had some questions.

23 COL. CONRAD: You can ask questions now

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1 and they will be recorded and we will be able
2 to get back to you. If you want to put them
3 on the record because we have to address them
4 one way or the other.

5 MR. SCHAFER: All right. For the record,
6 I used to work at Linde Praxair for about 14
7 and a half years. My first question is, is the
8 Linde site geologically higher in elevation than
9 Ashland 1 and 2?

10 My second question is, were these sites
11 connected by Two Mile Creek during war time to
12 be dumped into the Niagara River and my third
13 question is, why would you clean up a site when
14 you have not totally cleaned up the Linde site
15 and the scenario and I'm trying to make here is,
16 when I look uphill from the river, Linde is uphill
17 from the water stream. So, that's how I tied that
18 together.

19 Thank you.

20 COL. CONRAD: Mr. Don Finch.

21 MR. FINCH: In February I will be starting
22 my fifth year of research. I think we could
23 say one thing for the F.A.C.T.S. group, we

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1 have done more research than anybody in
2 Western New York and anybody wants to argue it,
3 step right up but I hope the politicians, CANiT,
4 realize what they are leaving behind for future
5 generations. If I am correct, Native American
6 culture projects any problems that might be
7 at hand, seven generations down the road and
8 I just hope that all these nice speeches and what
9 have you, everybody go home tonight and sleep
10 with a clear conscience, not be worried about
11 the seventh generation down the road.

12 Thank you.

13 COL. CONRAD: That finishes up the cards
14 that I received. If there is anyone else that
15 would like to make a public comment? If you
16 would please come up and make your comment and
17 then fill out the card afterwards, please.

18 MR. WATSON: Bill Watson, Chairman of the
19 City of Tonawanda Environmental Control Board.

20 First I would like to say that as far as
21 the thorium, the 40 picocuries per gram is
22 unacceptable. By far the five picocuries per
23 gram is far more acceptable.

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1 The concern is that a worker and we are
2 assuming that the worker works for 1,750 hours
3 per year which is the standard assumption, they
4 would receive a level of 800 millirems per year
5 from the radon. This is unacceptable.

6 I also have a concern that the Niagara
7 landfill is not being addressed. This is an
8 example of addressing one land unit but not
9 addressing the other land unit. This is an
10 example as Jim talked about of the segmentation
11 of the process. This is not allowed by NEPA
12 but it's not that it's not allowed by NEPA that
13 concerns me, what concerns me about the Niagara
14 landfill is that it should be a higher priority
15 than Ashland 1 and Ashland 2 cleanup sites.
16 The reason is, I view the primary cause of
17 concern to the communities, the adjacent
18 communities is the airborne radioactive radon
19 gas.

20 Now, radon is the primary radiation threat
21 to the surrounding community because it's airborne,
22 because it can move around as the wind moves
23 around. When the wind is blowing 20 miles an

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1 hour, it's going to move 20 miles in one hour.

2 The basic problem is Ashland and I'm not
3 suggesting that we simply cap Ashland 1 and
4 Ashland 2. I do applaud the effort that has been
5 made to remove the radioactive material from both
6 of those sites but I would also like to point out
7 that it's important to realize that Ashland 1 and
8 Ashland 2 could be simply capped and if this was
9 done with a few feet of clay, the radon would not
10 be an appreciable problem. The problem with the
11 Niagara landfill site is it can be capped but
12 because the radioactive material was mixed with
13 garbage for lack of a better word, the garbage
14 produces nothing and this site must be vented
15 to the air.

16 Now, as one who has a Master's in geology,
17 I am concerned with the permeability when you
18 sink wells in 40 feet deep and then you allow it
19 to be vented. I am further concerned when you
20 decide to pump the radon gas out because it's
21 not coming out fast enough. The reason for this
22 is radon gas has a half life of 3.7 days and
23 basically what is going to happen is that the

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1 radon comes out slow, it's going to decay. It's
2 not going to be as much of a danger. That would
3 be half the danger if it takes 3.7 days to come
4 out.

5 Now, if you speed up the process and pump
6 it out, it doesn't do the half life period,
7 that's going to be much more concentrated.

8 So, I'm concerned as I said before about
9 the segmentation of the review process and the
10 improper prioritization of the sites, in
11 particular the low priority given to the Niagara
12 landfill.

13 Now, I realize it constitutes a much
14 more difficult problem because of the mounds
15 of garbage on top of the radioactive waste but
16 the other sites do have simple solutions. This
17 is a solution that basically you don't have. You
18 have to let the methane out, okay, for obvious
19 reasons. It could explode, number one and for
20 number two, it's going to crack the cap as it
21 expands. So, you have to vent it. You have to
22 let it out and in the process you are going to
23 let out radon.

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1 Thank you.

2 COL. CONRAD: We are right on time for the
3 public meeting for 7:00 to 9:00 P.M. I have no
4 other cards in. What I would like to do now is
5 just review very quickly, the comment period ends
6 on the 9th of January, 1998. You will still have
7 time between now and then to submit written
8 comments or to call us at the Public Information
9 Center. There is plenty of information up here
10 off to the right to pick up and you can get
11 addresses and phone numbers and points of contact.

12 We will then address the comments before
13 we come out with a final proposed plan on this
14 and we will address each comment heard tonight.

15 We will also, if you are on the mailing
16 list, we will send out information to you in
17 response to the comments that we heard today.
18 If we are not able to answer all the questions,
19 we are not able to allay all concerns you have
20 heard tonight, we will have to do that in order
21 to proceed with the project.

22 What I have asked now is, I have got some
23 members of my staff as well as from Bechtel

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1 and SIC who have been involved in the process
2 here and I have asked them to hang around for
3 a few more minutes to answer any questions
4 that you might have but the formal presentation
5 is over.

6 Thank you, very much.

7 (PROCEEDINGS CONCLUDED.)

8 * * * * *

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5.1 Responses to Public Hearing Comments

5.1.1 Response to Taylor Comment

- 1.1 – The positive nature of this comment, located on page 61 of the Public Hearing Transcript, is noted. The remediation that will be performed on the Ashland sites will constitute a permanent remedy for these sites in that materials exceeding the cleanup guideline developed to protect human health and the environment will be removed from these sites for off-site disposal. This action will allow for the future development of these properties consistent with the Town of Tonawanda Waterfront Region Master Plan.

5.1.2 Response to Swanick Comment

- 1.2 – The positive nature of this comment, located on pages 65 and 66 of the Public Hearing Transcript, is noted. The remediation that will be performed on the Ashland sites will constitute a permanent remedy for these sites in that materials exceeding the cleanup guideline developed to protect human health and the environment will be removed from these sites for off-site disposal. This action will allow for the future development of these properties consistent with the Town of Tonawanda Waterfront Region Master Plan.

5.1.3 Responses to Tobe Comments (comment located starting on page 72 of the Public Hearing Transcript)

- 1.3.1 – Cleanup criteria for the Ashland sites were developed using the CERCLA process. The cleanup criteria must satisfy the CERCLA acceptable risk range as well as the ARARs. The Th-230 guideline development considered intended and reasonable future land use, the likely maximum exposed individuals, and the criteria included in the ARARs. The key ARARs included EPA 40 CFR 192 and NRC 10 CFR 20. The result of the guideline development effort was a cleanup criteria of 40 pCi/g Th-230.

The guideline derivation demonstrated that the conditions at the site, after removing soils exceeding the site-specific derived guideline of 40 pCi/g Th-230, will be protective of human health and the environment, meet the ARARs, and meet the acceptable CERCLA risk range established by the USEPA in the NCP. The analysis also demonstrated that at this cleanup criteria level, the estimated doses to receptors for the intended land uses (commercial/industrial) meet the objectives defined in the to be considered (TBC) guideline of 10 mrem/yr (NYSDEC TAGM 4003) for intended land use.

- 1.3.2 – Excavated soils containing in excess of the 40 pCi/g Th-230 guideline will be shipped offsite for commercial disposal.
- 1.3.3 – In establishing the guideline for the Ashland sites, no credit was taken for the clean backfill during dose modeling.
- 1.3.4 – Clean backfill will be supplied from an off-site commercial source.

5.1.4 Response to Tobe Comment (comment located starting on page 72 of the Public Hearing Transcript)

- 1.4 – Appropriated funds will be used to fund the cost of response actions on the site, and no particular groups will be provided with funding. USACE will continue to provide information on the remedial action to the public and welcomes public interest in the work throughout the project.

5.1.5 Response to Tobe Comment (located on page 73 of the Public Hearing Transcript)

- 1.5 – The current remediation plan for the Ashland sites is to excavate contaminated soils, move them to a rail siding, and transport them off site by rail. The contractor will be required to submit work plans in advance, subject to government review and approval, which will demonstrate a safe and efficient approach to the work and will also demonstrate understanding of and intent to comply with all worker and public safety requirements which apply to the work in progress. The plans will also be reviewed by regulatory agencies, including coordination with appropriate emergency response organizations, to ensure protection of human health and the environment and compliance with applicable or relevant and appropriate laws and regulations, to the extent applicable, such as the Emergency Planning and Community Right to Know Act of 1986.

5.1.6 Responses to Calebrese Comments (located starting on page 74 of the Public Hearing Transcript)

- 1.6.1 – The remediation that will be performed on the Ashland sites will constitute a permanent remedy for these sites in that materials exceeding the cleanup guideline developed to protect human health and the environment will be removed from these sites for off-site disposal. This action will allow for the future development of these properties consistent with the Town of Tonawanda Waterfront Region Master Plan.
- 1.6.2 – Cleanup criteria for the Ashland sites were developed using the CERCLA process. The cleanup criteria must satisfy the CERCLA acceptable risk range as well as the ARARs. The Th-230 guideline development considered intended and reasonable future land use, the likely maximum exposed individuals, and the criteria included in the ARARs. The key ARARs included EPA 40 CFR 192 and NRC 10 CFR 20. The result of the guideline development effort was a cleanup criteria of 40 pCi/g Th-230.

The guideline derivation demonstrated that the conditions at the site, after removing soils exceeding the site-specific derived guideline of 40 pCi/g Th-230, will be protective of human health and the environment, meet the ARARs, and meet the acceptable CERCLA risk range established by the USEPA in the NCP. The analysis also demonstrated that at this cleanup criteria level, the estimated doses to receptors for the intended land uses (commercial/industrial) meet the objectives defined in the to be considered (TBC) guideline of 10 mrem/yr (NYSDEC TAGM 4003) for intended land use.

5.1.7 Response to Sinclair Comment (located on page 80 of the Public Hearing Transcript)

- 1.7 – The positive nature of this comment is noted. Refer to Section 4.1.

5.1.8 Responses to Rauch Comments (located starting on page 82 of the Public Hearing Transcript)

- 1.8.1 – Cleanup criteria for the Ashland sites were developed using the CERCLA process. The cleanup criteria must satisfy the CERCLA acceptable risk range as well as the ARARs. The Th-230 guideline development considered intended and reasonable future land use, the likely maximum exposed individuals, and the criteria included in the ARARs. The key ARARs included EPA 40 CFR 192 and NRC 10 CFR 20. The result of the guideline development effort was a cleanup criteria of 40 pCi/g Th-230.

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- 1.8.2 – Cleanup criteria for the Ashland sites were developed using the CERCLA process. The cleanup criteria must satisfy the CERCLA acceptable risk range as well as the ARARs. The Th-230 guideline development considered intended and reasonable future land use, the likely maximum exposed individuals, and the criteria included in the ARARs. The key ARARs included EPA 40 CFR 192 and NRC 10 CFR 20. The result of the guideline development effort was a cleanup criteria of 40 pCi/g Th-230.

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- 1.8.3 – The 1998 Energy and Water Appropriations Bill transferred administration and execution of FUSRAP to USACE from the DOE, the Buffalo District assumed responsibility for issuing the PP for the Ashland sites. Prior to releasing the PP for public comment, USACE reviewed community concerns to maximize stakeholder opportunity to participate in the decision-making process. Mindful of the concerns about limited public participation in development of the PP, USACE prepared a communications plan for release of the PP. The activities detailed in that communications plan are listed in Section 2, Overview of Public Involvement. The public involvement opportunities offered by USACE were intended to encourage public participation in the CERCLA decision process, and they do meet the requirements of CERCLA, as amended, and the NCP.

5.1.9 Response to Hennessey Comment (located on page 87 of the Public Hearing Transcript)

- 1.9 – The remediation that will be performed on the Ashland sites will constitute a permanent remedy for these sites in that materials exceeding the cleanup guideline developed to protect human health and the environment will be removed from these sites for off-site disposal. This action will allow for the future development of these properties consistent with the Town of Tonawanda Waterfront Region Master Plan.

5.1.10 Response to Krieger Comment (located on page 87 of the Public Hearing Transcript)

- 1.10 – The PP has been made available for all potentially interested parties to review, including the International Joint Commission (IJC). USACE has not received any comments from the IJC.

5.1.11 Response to Dole Comment (located on page 88 of the Public Hearing Transcript)

- 1.11 – Compliance with the remediation contractor's work plans will successfully address health and safety issues and risks due to radiation exposure during remediation to site workers and the surrounding population.

5.1.12 Response to Lee Comment (located on page 89 of the Public Hearing Transcript)

- 1.12 – Leaving the site under current conditions (No Action Alternative) could result in dose and risk limits above specified limits under some future use scenarios (as indicated in the PP).

5.1.13 Responses to Schafer Comments (located on page 91 of the Public Hearing Transcript)

- 1.13.1 – The Linde site is geographically higher in elevation than Ashland 1 and 2.
- 1.13.2 – Although Linde is higher in elevation than Ashland, the two sites are not connected. Drainage from the Linde site is via Twomile Creek and into the Niagara River. Drainage from the Ashland sites is via Rattlesnake Creek to Twomile Creek.
- 1.13.3 – Due to the geographic position of the Linde site relative to the Ashland sites, there will be no adverse impacts on the Ashland sites from other Tonawanda sites after remediation is complete.

5.1.14 Response to Finch Comment (located on page 92 of the Public Hearing Transcript)

- 1.14 – Cleanup criteria for the Ashland sites were developed using the CERCLA process. The cleanup criteria must satisfy the CERCLA acceptable risk range as well as the ARARs. The Th-230 guideline development considered intended and reasonable future land use, the likely maximum exposed individuals, and the criteria included in the ARARs. The key ARARs included EPA 40 CFR 192 and NRC 10 CFR 20. The result of the guideline development effort was a cleanup criteria of 40 pCi/g Th-230.

The guideline derivation demonstrated that the conditions at the site, after removing soils exceeding the site-specific derived guideline of 40 pCi/g Th-230, will be protective of human health and the environment, meet the ARARs, and meet the acceptable CERCLA risk range

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5.1.15 Response to Watson Comment (located on page 92 of the Public Hearing Transcript)

- 1.15 – Cleanup criteria for the Ashland sites were developed using the CERCLA process. The cleanup criteria must satisfy the CERCLA acceptable risk range as well as the ARARs. The Th-230 guideline development considered intended and reasonable future land use, the likely maximum exposed individuals, and the criteria included in the ARARs. The key ARARs included EPA 40 CFR 192 and NRC 10 CFR 20. The result of the guideline development effort was a cleanup criteria of 40 pCi/g Th-230.

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5.1.16 Response to Watson Comment (located on page 93 of the Public Hearing Transcript)

- 1.16 – These concerns will be addressed when action is proposed at those specific sites. The public will continue to be informed of schedules and actions at the other FUSRAP sites through the continued implementation of the Community Relations Plan.



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JAN - 5 1998

commission for
conservation of the environment

GEORGE B. MELROSE
chairman

USACE Buffalo District
Tonawanda FUSRAP Office

December 30, 1997

U S Army Corps of Engineers
Public Information Center
70 Pearce Avenue
Tonawanda N Y 14150

Subject: Proposed Plan for Cleanup of Ashland I & II Sites

The Town of Tonawanda Environment Commission and Planning Board have actively pursued cleanup of the FUSRAP sites in the Town for nearly 20 years and submitted in-depth comments to the DOE 1993 Feasibility Study. We are well pleased with the significant progress made during the past year by DOE under site manager James Kopotic in developing a Proposed Plan and with the aggressive moves being made by the Army Corps of Engineers to implement the plan. The activities by Bechtel are also commended.

We consider that the Proposed Plan will amply protect public health by meeting the rigorous Federal and State standards, that waterfront development will be facilitated in accord with the Town's Master Plan and that all excavated radioactive soils will be disposed of out-of state.

2.1

The Environment Commission and the Planning Board fully support the Proposed Plan for Ashland I, II and Seaway D and encourage its prompt implementation. We concur with CANIT's position. Certain issues which we feel need to be confirmed or addressed are given in the attachment.

We look forward to early actions by the Corps particularly the issuance of the ROD and the start of remedial action. We recommend investigating turn-key bids from licensed private firms, such as TERCs, for excavation, transport and disposal.

We are very pleased with the expeditious manner in which the Corps has taken responsibility for the project and demonstrated its intent to carry it out promptly and efficiently. Please provide us with a copy of the ROD and the Responsiveness Summary.

Please feel free to call on us to help make early safe remediation a reality.

Sincerely,

George B. Melrose, Chair

cc:CANIT, L/Col Conrad



RECYCLED
PAPER

Comments to be confirmed or addressed

Attachment to Environment Commission letter of December 30, 1997

- 2.2 1. Will remediation comply with guidelines of NYS TAGM 4003 and DOE Order 5400.5
2.3 specified in the Proposed Plan? If not, what alternative is proposed.
- 2.4 2. Will restoration use clean backfill to grade? Definition of "clean backfill"
- 2.5 3. Will any fences, signs or other institutional controls be required after closure?
- 2.6 4. Will there be any restrictions for use of the sites for commercial, office or light industrial
2.7 purposes?
- 2.8 5. Will dose levels of remaining soil be independently monitored during excavation?
- 2.9 6. Please describe the oversight activities, onsite and administrative, to be performed by the Corps
2.10 during remediation
- 2.11 7. Describe monitoring and other activities which are to take place after closure.
- 2.12 8. What are the estimated dates for completion of closure at Ashland I and II. Could private
2.13 development begin immediately at that time?
- 2.14 9. Have sufficient Federal funds been appropriated and committed for completion of the proposed
2.15 plan?
- 2.16 10. Can temporary roads or rails be constructed and left in place such as to facilitate post-closure
2.17 site development?
- 2.18 11. Regarding the balance of the Tonawanda sites in the Town: Linde (Praxair), Seaway A, B
2.19 and C and the Town landfill: What is the timeline for making radiological dose assessments,
2.20 issuing guidelines and distributing proposed final remediation plans? Are funds available for
2.21 these efforts? and for remediation? What are the estimated closure dates?

5.2 Responses to Town of Tonawanda Comments

- 2.1 – The positive nature of this comment is noted. The remediation that will be performed on the Ashland sites will constitute a permanent remedy for these sites in that materials exceeding the cleanup guideline developed to protect human health and the environment will be removed from these sites for off-site disposal. This action will allow for the future development of these properties consistent with the Town of Tonawanda Waterfront Region Master Plan.
- 2.2 – Cleanup criteria for the Ashland sites were developed using the CERCLA process. The cleanup criteria must satisfy the CERCLA acceptable risk range as well as the ARARs. The Th-230 guideline development considered intended and reasonable future land use, the likely maximum exposed individuals, and the criteria included in the ARARs. The key ARARs included EPA 40 CFR 192 and NRC 10 CFR 20. The result of the guideline development effort was a cleanup criteria of 40 pCi/g Th-230.
- The guideline derivation demonstrated that the conditions at the site, after removing soils exceeding the site-specific derived guideline of 40 pCi/g Th-230, will be protective of human health and the environment, meet the ARARs, and meet the acceptable CERCLA risk range established by the USEPA in the NCP. The analysis also demonstrated that at this cleanup criteria level, the estimated doses to receptors for the intended land uses (commercial/industrial) meet the objectives defined in the to be considered (TBC) guideline of 10 mrem/yr (NYSDEC TAGM 4003) for intended land use.
- 2.3 – Prior to backfilling the excavations with clean fill, the soils remaining will be tested to ensure that the cleanup criteria has been achieved. Clean backfill will be supplied from an off-site commercial source. It is the intention to backfill excavations with this clean soil, vegetate the area and restore the site to its original appearance (or better).
- 2.4 – No institutional controls will be required at the sites after remediation is completed.
- 2.5 – Once the site has been restored, it can be released for development into an industrial/commercial-use facility with 5-year reviews as required by CERCLA.
- 2.6 – Prior to backfilling the excavations with clean fill, the soils will be tested to ensure that the cleanup criteria has been achieved.
- 2.7 – USACE will oversee the work to ensure that it is being done in accordance with the Scope of Work, approved plans, and all safety rules and regulations. USACE oversight will include a full-time presence, on-site, when work is being conducted. Reports will be prepared each day of work and the contractors work will be closely monitored and evaluated. This oversight is in addition to the quality control and safety procedures and personnel maintained by the contractor.
- 2.8 – Once the site has been restored, it can be released for development into an industrial/commercial-use facility with 5-year reviews as required by CERCLA. Post-closure monitoring will not be required and residual radionuclide concentrations will, on average, be much less than the guidelines values resulting in actual doses and risks much less than specified limits.

- 2.9 - The current schedule shows remediation being completed at Ashland 2 in 1998 and Ashland 1 in 1999. These schedules are based on removing the volume of contaminated soil estimated in the PP. If site conditions vary from the modeled contamination, the project will be done either more quickly or will take longer than planned.
- 2.10 - All work is subject to the availability of appropriated funds from Congress. Funds have been and will continue to be requested to complete all the work described for this remedial action. It is anticipated that funds will be made available to initiate the remedial action in a timely manner after the issuance of the ROD and completion of the remedial design. Funding is currently being requested to ensure that the remedial action can be completed in 1999. There is no guarantee, however, that congress will appropriate the funds in 1999 that are ultimately requested for the FUSRAP program.
- 2.11 - Real estate agreements are currently being worked out at each affected property. These agreements state the conditions of use and expected restoration by the government after remediation. Whether temporary roads and rail loading facilities will be left in-place will be subject to the agreement of the current land owners.
- 2.12 - These concerns will be addressed when action is proposed at those specific sites. The public will continue to be informed of schedules and actions at the other Tonawanda FUSRAP sites through the continued implementation of the Community Relations Plan.



F.A.C.T.S.

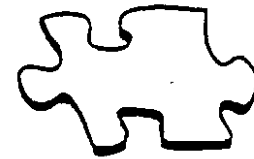
(For A Clean Tonawanda Site)

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5 JAN 90 10 46

HALL ROOM

CER03-14-S



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Kenmore, NY 14217-0566

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Fax: (716) 876-9552

January 1, 1998

Lt. Col. Michael J. Conrad, Jr.
Site Manager, FUSRAP Tonawanda Site
Buffalo District, U.S. Army Corps of Engineers
1776 Niagara Street
Buffalo, NY 14207-3199

Subject: Request for extension of comment period on proposed plan
for FUSRAP Tonawanda Site

Dear Colonel Conrad:

As you know, F.A.C.T.S. was identified by the U.S. Department of Energy as the only non-governmental community stakeholder group participating in the environmental review process at the Tonawanda Site and we take our public interest advocacy role seriously.

3.1 The purpose of this letter is to request an indefinite extension of the comment period on the proposed plan for the FUSRAP Tonawanda Site until all the essential site-related information which F.A.C.T.S. has requested is provided to us and, subsequently, a reasonable amount of additional time (at least 30 days) so that we may comment upon the proposal in an informed and meaningful manner as provided for by NEPA and CERCLA.

3.2 The requested information includes the following: 1) several items contained in our FOIA requests made to DOE Oak Ridge dated 3-17-96, 11-23-96, and 2-4-97, and our FOIA request to the National Archives and Records Administration dated 2-4-97; these items are the subject of litigation in the U.S. District Court for the Western District of New York, 2) the items contained in our FOIA requests made to DOE Oak Ridge dated 9-3-97 and 11-6-97, 3) the items contained in our FOIL request to the NYS Department of Environmental Conservation dated 12-23-97, and 4) several verbal requests made to you, your staff, and Bechtel staff.

3.3 The items outlined above include information about potentially responsible parties (PRPs) and requests resulting from our lack of access to the decisionmaking process over the past year and a half and the information utilized in that process. As you know we were not made a party to the discussions

between John LaFalce's office (and presumably the CANiT politicians) and DOE which led to the current proposal.

We thank you for your prompt attention to this request.

Sincerely,


James Rauch

5.3 Responses to F.A.C.T.S. Comments

- 3.1 – The PP was issued on November 10, 1997 and USACE granted a 30-day extension to the comment period. An additional 11 days was added to this extension after several members of the public requested additional time for preparing their comments. With the extension, the comment period totaled 71 days. Other extensions were considered, however, USACE determined that additional extensions were not appropriate.
- 3.2 – Documentation relating to calculations used in the cost evaluation of the investigated remedial alternatives (including volume estimates) have been placed in the Administrative Record and are available for public review. A major component of the cost analysis is the volume of the soils determined to require removal and disposal. The cost estimates used for the development of the revised PP used volumes calculated based on a model of the site contamination generated using existing soil contamination characterization results from all historical sampling conducted at the site. The calculations and results of the modeling have also been placed in the document repository for public review and are part of the Administrative Record.
- 3.3 – USACE has begun to research issues regarding PRPs and will pursue all appropriate means to seek reimbursement from responsible parties on behalf of the Federal Government. However, at this time, no decisions have been made regarding specific parties to pursue nor have offers of indemnification been made by USACE to resolve any liabilities that the Federal Government may have.

RECEIVED

JAN - 5 1998

USACE Buffalo District
Tonawanda FUSRAP Office

174 Capen Boulevard
Buffalo, NY 14226
January 2, 1998

Lt. Col. Michael J. Conrad, Jr.
FUSRAP Public Information Center
70 Pearce Avenue
Tonawanda, NY 14150

Dear Lt. Col. Conrad:

Since I was unable to attend the meeting December 17th, here are a few of my thoughts and reactions to the "Proposed plan for the Ashland I and Ashland II sites."

One of my primary concerns has to do with the transfer of FUSRAP responsibilities from the DOE to the Army Corps of Engineers. Citizens and elected officials of the area have worked diligently for ten years to achieve the agreement with DOE which is summarized in the resolution passed by CANIT on July 23, 1997. I hope and expect that all of the work leading to that document will be respected by the Corps. Further, I recommend that the Corps be diligent in its follow-up to all participants from the public, so as to ensure that public trust in the whole process can be maintained.

I commend you for the excellent hand-outs made available at the December 17th meeting (and sent to me at my request). Difficult concepts are presented in clear and unambiguous language, so that the public, such as myself, can acquire a rudimentary understanding of the underlying science that applies to the site. When I study your materials, I become confident that you are competent to do the job.

My specific comments on the Proposed Plan, dated November 1997:

4.1 p. i I endorse Alternative 2A as the appropriate remedy for Ashland I & II, with particular reference to using the NYSDEC guideline TAGM, which is a stricter standard than that of the DOE.

4.3 p. 3-4 The maps show only access roads through the sites. Is any rail available for transportation of materials to the disposal site? Whatever mode is used, it will be extremely important to inform the public as to the risk of exposure to human health and to the environment during the trucking of materials away from the site.

4.4 p. 6 In addition, since Rattlesnake Creek and its wetlands are in Ashland II, I recommend that the Corps offer a suitable remediation plan for this ecologically sensitive area. One concern the public has is whether radioactivity is currently seeping through the watershed and out to the Niagara River via Two Mile Creek. 4.5 I further recommend that the Corps conduct a thorough investigation of the Two Mile Creek watershed to determine what specific risks to wildlife and natural habitats currently exist.

4.6 p. 8 Removal of the contaminated soils is the goal. I agree with that goal. It occurs to me, however, that there may be residual contamination in the environment, chiefly through the wildlife and natural habitats. Is there any way to assess such factors? Further, there could be unintended consequences that develop as the excavation of contaminated material proceeds. Therefore, it is essential that the Community Right to Know element of SARA be adequately put in place before any bulldozer begins its work. 4.7

Sincerely,

Gladys Gifford
Gladys Gifford

5.4 Responses to Gifford Comments

- 4.1 – The positive nature of this comment is noted. The remediation that will be performed on the Ashland sites will constitute a permanent remedy for these sites in that materials exceeding the cleanup guideline developed to protect human health and the environment will be removed from these sites for off-site disposal. This action will allow for the future development of these properties consistent with the Town of Tonawanda Waterfront Region Master Plan.
- 4.2 – Rail transportation may be utilized during waste shipment from the Ashland sites.
- 4.3 – USACE will review the contractor's transportation and disposal plan to ensure that it complies with all applicable or relevant and appropriate laws, regulations and executive directives, and is protective of human health and the environment.
- 4.4 – Impact to wetlands will be minimized to the extent practicable during remediation.
- 4.5 – Testing conducted during the investigation phase of the RI/FS process, did not indicate impacts to the surface water at the confluence of Rattlesnake Creek and Twomile Creek, indicating that there is no impact from the Ashland sites on the Niagara River.
- 4.6 – Once the site has been restored, it can be released for development into an industrial/commercial-use facility with 5-year reviews as required by CERCLA. Monitoring will not be required and residual radionuclide concentrations will, on average, be much less than the guideline value resulting in actual doses and risks less than specified limits. Consequently, the remedy will be protective of human health and the environment, including ecological receptors at the site.
- 4.7 – The current remediation plan for the Ashland sites is to excavate contaminated soils, move them to a rail siding, and transport them off site by rail. The contractor will be required to submit work plans in advance, subject to government review and approval, which will demonstrate a safe and efficient approach to the work and will also demonstrate understanding of and intent to comply with all worker and public safety requirements which apply to the work in progress. The plans will also be reviewed by regulatory agencies, including coordination with appropriate emergency response organizations, to ensure protection of human health and the environment and compliance with applicable or relevant and appropriate laws and regulations, to the extent applicable, such as the Emergency Planning and Community Right to Know Act of 1986.

January 6, 1998

U.S. Army Corps of Engineers
FUSRAP Public Information Center
70 Pearce Avenue
Tonawanda, N.Y. 14150

Dear Sir or Madam,

I would like to make a comment about the Ashland Site - "Thank God some progress is finally being made!"

I've listened to the same "go-round" at meetings for about ten years so the meeting with the Army Corps was refreshing.

The news said the clean-up would take place during the fall of 1998, I wish it was sooner. I am seventy seven years ^{old} so getting to meetings is more difficult but I will continue to be active as long as necessary. I am relieved that something is being done for the future of the children and our source of fresh water.

Thank you.

RECEIVED

JAN - 8 1998

USACE Buffalo District
Tonawanda FUSRAP Office

Sincerely

Lillian C. Detar

Lillian C. Detar
326 Westchester Blvd.
Kenmore, NY 14217-1316

5.5 Response to Detar Comment

5. – The positive nature of this comment is noted. The remediation that will be performed on the Ashland sites will constitute a permanent remedy for these sites in that materials exceeding the cleanup guideline developed to protect human health and the environment will be removed from these sites for off-site disposal. This action will allow for the future development of these properties consistent with the Town of Tonawanda Waterfront Region Master Plan.

PARSONS ENGINEERING SCIENCE, INC.

180 Lawrence Bell Drive, Suite 100 • Williamsville, New York 14221 • (716) 633-7074 • Fax: (716) 633-7195

January 8, 1998

U.S. Army Corps of Engineers
FUSRAP Public Information Center
70 Pearce Avenue
Tonawanda, New York 14150

RECEIVED

JAN 12 1998

USACE Buffalo District
Tonawanda FUSRAP Office

RE: Proposed Plan for Cleanup of Ashland I and II Sites

Gentlemen:

6.1
Parsons Engineering Science, Inc. (Parsons) has followed with interest the remediation strategy for the various properties comprising the FUSRAP Tonawanda Site for a number of years. We recognize the importance of succeeding on this program to the Corps, to the Buffalo District, and to the residents of the Town of Tonawanda. Based on Parsons' experience at USDOD and USDOE facilities with permitting, processes, deactivation, decontamination, decommissioning, transportation logistics, environmental health and safety, remediation, quality assurance, and validation/certification, we believe that the *Proposed Plan for the Ashland 1 and Ashland 2 Sites (USACE, 11/97)* will be protective of human health and the environment, and will facilitate development of Tonawanda's waterfront, an activity which Parsons strongly supports. Parsons is pleased to recommend to the Corps the prompt implementation of the remedy described in the Plan.

During the Public Information session on December 17th, Lt. Col. Conrad made a strong impression on us regarding the advantage of local Corps involvement. He noted that by bringing the Buffalo District on board, Congress not only made available a technically qualified and results-oriented agency, but also enabled a body of interested local citizens to be at the helm of the cleanup. We at Parsons applaud and support this position. However, this begs the question, "how will the Corps maximize the opportunities for qualified local companies under the FUSRAP program?"

6.2
We believe that, as a local business, it is imperative to reiterate the added value available to the remediation through the involvement of local companies in the upcoming design and construction tasks at the various properties. The waste was generated locally; local residents and businesses have lived with its presence for years...now it can be managed effectively using local talent and resources. Parsons believes that, while providing an out-of-town Corps' contractor through such programs as the Louisville or Baltimore District Total Environmental Restoration Contract (TERC) programs is an approach to site remediation, it is not the most effective and efficient one. It does not maximize support of the local economy and contracting community, and reduces the local control and oversight of work performance and contract management. We strongly encourage the Buffalo District to utilize qualified local contractors for the remedial design, construction management, and remediation of this problem.

PARSONS ENGINEERING SCIENCE, INC.

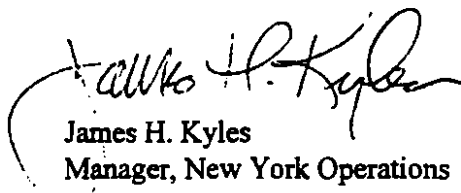
U.S. Army Corps of Engineers
FUSRAP Public Information Center
January 8, 1998
Page 2

We applaud the efforts of the Corps and its existing contractors in advancing this project. We look forward to the local business community participating in the Ashland sites' remedial program.

Please feel free to call us at (716) 633-7074 if you have any questions on this matter.

Very truly yours,

PARSONS ENGINEERING SCIENCE, INC.



James H. Kyles
Manager, New York Operations

cc: The Honorable John J. LaFalce
Legislator Charles M. Swanick
Commissioner Richard M. Tobe
Supervisor Carl J. Calabrese

5.6 Parsons Comment Responses

- 6.1 – The positive nature of this comment is noted. The remediation that will be performed on the Ashland sites will constitute a permanent remedy for these sites in that materials exceeding the cleanup guideline developed to protect human health and the environment will be removed from these sites for off-site disposal. This action will allow for the future development of these properties consistent with the Town of Tonawanda Waterfront Region Master Plan.
- 6.2 – The actual work will be conducted by contractors with experience on similar projects. Standard government procurement procedures will be followed by USACE in selecting qualified contractors to perform all necessary work to complete response actions at these sites.

Received 1/20/98



F.A.C.T.S.

(For A Clean Tonawanda Site)

"PUTTING THE PIECES TOGETHER"



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COMMENTS ON "PROPOSED PLAN FOR THE ASHLAND 1 AND ASHLAND 2 SITES,
TONAWANDA, NEW YORK, NOVEMBER 1997, FINAL, USACE/OR/21950-1029"

James M. Rauch

January 8, 1998

Opening Comments

7.1 1) We believe the environmental review process for the Tonawanda Site, started by the Department of Energy (DOE) and recently transferred to the U.S. Army Corps of Engineers (ACE), is flawed and raises serious questions that need to be objectively resolved.

7.2 2) A fundamental question is why were the EPA and the U.S. Nuclear Regulatory Commission (NRC) not involved in the environmental review process as co-lead agencies from the start. As far as we know, there has been no NRC involvement in the process. Other than as described in comment 30, we know of no involvement by EPA (see U.S. Nuclear Regulatory Commission Is the Authorized Regulator section and comments 30, 17, and 18 below)

7.3 3) What statute(s) and/or regulations authorize ACE to continue the integrated NEPA/CERCLA EIS environmental review process commenced by DOE in 1988 at the DOE FUSRAP Tonawanda Site? Please cite specific statute(s) and/or regulations and section(s) thereof.

7.4 4) What statute(s) and/or regulations authorize ACE to conduct remediation of the MED/AEC 11.e.(2) byproduct materials present at the FUSRAP Tonawanda Site? Please cite specific statutes(s) and/or regulations and section(s) thereof.

7.5 5) Former DOE Assistant Secretary Thomas Grumbly made a commitment to the community to provide a sitewide final cleanup plan by the end of 1996. This was not done. This revised Proposed Plan released by ACE presents final remediation alternatives covering only the Ashland 1 (now including Area D of the Seaway property) and Ashland 2 properties. Why has a sitewide final cleanup plan not been presented? Please provide a thorough, objective explanation.

7.6 6) This revised Proposed Plan covers only the Ashland 1, including Seaway Area D, and Ashland 2 properties, and does not give any contaminated volume figures for any of the alternatives. The contaminated volumes for Alternatives 2 and 2A only of this revised PP were given by ACE in a handout (see reference) at the December 17,

1997 public hearing. The contaminated volume given, 85,000 cubic yards, for the limited version (limited to only Ashland 1, including Seaway Area D, and Ashland 2) of the draft RI/FS-EIS's Alternative 2 (complete cleanup by generic guidelines) is much less than half that determined by the draft RI/FS-EIS (a \$6 million dollar package) for these properties, 172,200 cubic yards. We find this change to be incredible (see comment 15).

7.7 7) This revised Proposed Plan contains non-sitewide alternatives and a new alternative, Alternative 2A, that are not analyzed in the draft FS-EIS. The rudimentary information given in the revised PP's description of these non-sitewide alternatives is insufficient to meet the public review requirements of NEPA and CERCLA (see comment 33). The draft FS-EIS is geared to a sitewide analysis and lacks the breakdown of non-sitewide alternatives information and analysis (e.g. costs, economies of scale) necessary under the narrowed scope to compare the alternatives, raising issues of segmentation and making it impossible to comment in the meaningful way provided for by the NEPA/CERCLA public review process. A supplement to the draft FS-EIS to correct these obvious deficiencies must be prepared and subjected to public review. (see Cost and Segmentation sections and comments 14, 15, 16, 28, 29, 34, and p 8 of reference 1.)

8) Our review of the Administrative Record shows it to be incomplete. We request that all documents listed as references in the draft RI/BRA/FS-EIS documents and those documents' references be made part of the Administrative Record, whether they are physically placed in the record or incorporated by reference. We also request that the documents described in the attached list of reference documents to these comments be incorporated into the Administrative Record. According to staff at the Tonawanda Public Information Center, DOE/ACE has no record of much, if not all, of the correspondence on this list.

U.S. Nuclear Regulatory Commission Is the Authorized Regulator

7.9 9) We think the U.S. Nuclear Regulatory Commission (NRC) is responsible for regulating the management and disposition of all the MED/AEC 11.e.(2) byproduct materials present at the Tonawanda Site. Title II of the Uranium Mill Tailings Radiation Control Act of 1978 (UMTRCA), which amends the Atomic Energy Act of 1954 (AEA), specifically directs the U.S. Nuclear Regulatory Commission (NRC) to control the management of 11.e.(2) byproduct materials located at inactive mill tailings sites such as the Tonawanda Site. Almost two years ago, we asked NRC to assume its statutory responsibilities at one of the Tonawanda Site properties, i.e. to regulate the release of radon gas from a controversial active gas extraction/cogenerator system being installed at the Seaway property (see references 58, 13, 14, 57, 59 to 65 and FOIA list). We made this request after we eventually learned that New York State's failure to implement the necessary regulations and program on the state level, as prescribed by UMTRCA, apparently had resulted in the State's loss of jurisdiction over 11.e.(2) byproduct materials in 1981 (see references 18 to 19, 59, and 69), which authority then reverted to NRC. We also notified NRC of problems with the interim actions at Linde by copy of

correspondence to NYS and DOE (see comments 17, and 18).

7.10 10) To implement the requirements of UMTRCA, NRC modified its Title 10 Part 40 regulations "Domestic Licensing of Source Material", including sections 40.2a, 40.3, and 40.21. What persons are currently authorized to receive, possess, use, transfer, provide for long-term care, deliver, and/or dispose of the byproduct materials located at each of the five FUSRAP Tonawanda Site properties: Linde, Ashland 1, Ashland 2, Seaway, and the Town of Tonawanda Landfill? In each case, please identify the specific license granting such authority and the name and address of the authorized person.

7.11 11) Over the last 10 years the NRC has developed a program for remediation of problematic contaminated sites, the definition of problematic including sites with large volumes of contaminated soils. Known since 1991 as the Sites Decommissioning Management Plan (SDMP), this program oversees the cleanup of both licensed and unlicensed sites. The program is described in NRC report NUREG-1444 and several other reports including the April 1992 SDMP Action Plan (57 FR 13389). For a site to be listed in the program it must meet one or more of five qualifying criteria. Though all the Tonawanda Site properties do meet many of these qualifying criteria, none of the properties has been listed in the SDMP program. We believe this represents a significant oversight by NRC.

7.12 12) We believe that the cleanup guidelines used by NRC in its SDMP program are applicable guidelines, under Sec. 84.a.(1) of UMTRCA, to remediation of the Tonawanda Site. The April 1992 SDMP Action Plan lists the cleanup criteria for SDMP sites; these criteria have been consistently applied to cleanup of listed SDMP sites. The action plan list includes the "Branch Technical Position (BTP) on Disposal or Onsite Storage of Thorium or Uranium Wastes from Past Operations" (46 FR 52061), the Office of Nuclear Material Safety and Safeguards' Policy and Guidance Directive FC 83-23, and EPA's Interim National Primary Drinking Water Regulations (40 CFR Part 141). Since the Tonawanda Site properties meet many of the SDMP's qualifying criteria, there is no reason that these cleanup guidelines should not be included in the environmental review. The SDMP guidelines are the best available guidelines for a site of this type, even if the site has not been listed in the program. In addition to these guidelines, Sec. 84.a(2) of UMTRCA requires that NRC management of all 11.e.(2) byproduct material at Title II uranium byproduct material sites such as Tonawanda conform to 40 CFR Part 192 sections 192.30 to 192.34, as well as the regulations prescribed therein. Also, the requirements specified in Sec. 84.a.(3) of UMTRCA must be met.

7.13 13) With respect to 40 CFR 192 Sec. 192.33 "Corrective action programs," in my comments on the draft RI/FS-EIS (see comment 31, reference 3), I pointed out that water from well B29W09D at Linde contained radium-226 in concentrations exceeding the EPA drinking water standard of 5 pCi/l (draft RI pp 4-216, 4-217, 7-18) and I called for further evaluation of groundwater impacts and the identification of potential remediation techniques. In response, DOE maintained that, since groundwater in the area is not currently used

for drinking water, drinking water guidelines are not applicable. However, according to NYS DEC, "(a)ll fresh groundwater in the State is classified as GA, with an intended best usage as a source of drinking water ... regardless of its current use." (see pp 24, 25 of enclosure to reference 4.) Section 192.33 requires that a corrective action program "be put into operation as soon as is practicable, and in no event later than eighteen (18) months after a finding of exceedance." To our knowledge, no such action has been taken. Why not? (see comment 11)

Segmentation of Review Process

7.14 14) The issue of groundwater impacts must be addressed on a sitewide basis rather than a property-specific basis. NEPA requires that cumulative impacts be addressed together; NEPA prohibits segmentation of the review process. (Also see comments 7, 16, and 26.) The analyses used in all draft BRA exposure scenarios (p B-2), and in the "Radionuclide Cleanup Guideline Derivation for Ashland 1, Ashland 2, and Seaway" (p 16) incorrectly ruled out groundwater as an exposure pathway - see comment 13 above. Also, in the August 1988 "Derivation of Uranium Residual Radioactive Material Guideline for the Ashland 1 and 2 Sites", the perched groundwater system was ruled out (p 5), even though this unit is capable of useable flow rates. Accordingly, these analyses should be revised. (see comments 7, 16, 26, and 34)

Volumes of Contaminated Soils/Sediments

7.15 15) The description of the contaminated soil and sediment volumes in the draft FS (pp 4-4, 4-7, and 4-8) provides no property-specific breakdown (uniform sitewide cleanup is assumed). However, EMAB previously reported (reference 2) property-specific volumes for draft FS Alternative 2 (determined using DOE's Order 5400.5 generic guidelines of 5/15 pCi/g for Ra-226 and Th-230, and a Tonawanda site-specific guideline of 28.4 pCi/g for U-238) of 120,200 cubic yards (cy) for Ashland 1, 52,100 cy for Ashland 2, and 117,000 cy for Seaway (with no breakdown by area, however, together Areas A and D contain 91,000 cy). EMAB sitewide totals are consistent with the draft FS totals. Not including Seaway area D, the EMAB Alternative 2 total for Ashland 1 and 2 is 172,300 cubic yards. The revised PP gives no volumes. However, for the same alternative, using the same generic guidelines as EMAB, the handout supplied at the ACE December 17, 1998 public hearing gives a contaminated soil volume sum for the Ashland 1 (including Seaway Area D) and Ashland 2 properties of 85,000 cubic yards. This is a discrepancy of much more than 87,000 cubic yards. We find this to be incredible. It suggests to us that NRC assumption of the environmental review process may be advisable (see comment 9). A supplement to the draft FS is required. Does the revised PP volume include contaminated sediments? According to the draft FS, these total 10,150 cubic yards. Please provide a detailed explanation of the method(s), e.g. computer model(s), used to calculate the volumes for the draft FS and the revised PP, and fully describe all differences. The method(s) employed must be acceptable to NRC, with regard to 11.e.(2) material, and NYS/EPA, with regard to non-radiological MED/AEC contamination (chemical COCs).

Extent of Contamination

7-16 16) The required NEPA/CERCLA review for these properties is deficient (see comment 7). NEPA requires an objective assessment of the cumulative impacts of a proposed action. The proposed action is the final remediation of Tonawanda Site properties identified as being contaminated with MED/AEC radioactive wastes. The draft RI states (p 7-38) that two vicinity properties, the Conrail property to the northeast of Linde and the Niagara Mohawk property adjacent to Seaway, are contaminated and will require designation into the Tonawanda RI/FS-EIS review process and that additional properties, R. P. Adams and the Town of Tonawanda landfill will require further investigation. The extent of major underground contamination at Linde associated with the injection wells has not been adequately addressed (see comment 10). The streambed of Twomile Creek, the G. K. Hambleton property and the Benson Development Co. property adjacent to Ashland 2 may also be contaminated. There may be others. The Town of Tonawanda landfill is said to contain over 15,000 cubic yards of contamination (EMAB, see reference 2) resulting from the deposition of sediments dredged from Twomile Creek. This property contains material with the highest average radium concentration (68 pCi/g) and total activity of any of the properties (EMAB). The Town of Tonawanda landfill was apparently designated into the remediation process in December 1992. But it was not included in the draft RI/BRA/FS analyses, nor were any of these other properties with the exception of the Niagara Mohawk property (pp 4-1, 4-2 of the draft FS). Have any of these properties or any other vicinity properties been designated for cleanup? Please supply information documenting why or why not in each case.

Interim Removal Actions

7-17 17) It is our understanding that interim actions must meet all applicable guidelines (see reference 70). We raised the issue of what building decontamination criteria are applicable to the interim actions at Linde in our December 20, 1996 comments (reference 67) on the November 1996 interim action "EE/CA for Building 30 at Praxair." Subsequently, we learned that surface decontamination criteria for radium were recommended by Oak Ridge National Laboratories (ORNL) for the decontamination of the Linde buildings based on findings contained in the May 1978 ORNL survey report for Linde (see first enclosure to reference 18). We asked both DOE and NYS Department of Labor address this issue (see references 18 to 21). NYS DOL responded that they had no jurisdiction over the matter. DOE evaded the issue. Neither DOE nor ACE has issued a response to comments on this EE/CA. In the meantime, we have been assured that these interim actions were not final remediation. The work continues using the fiftyfold less stringent uranium criteria (see references 50, 51). The revised PP (p 1) states that there will be no further review of the buildings at Linde following completion of the interim actions because "remediation of the Linde buildings has been addressed separately using Engineering Evaluations/Cost Analysis (EE/CA) documentation and public reviews." This implies that these interim actions constitute final remediation. When recently confronted on this issue, ACE (Bechtel) responded that there was other information contradicting the findings of ORNL. We

asked for that information, however, no such information has been provided. We have no reason to believe either the ORNL experts' findings or recommendation to be incorrect, and so, we must conclude that DOE/ACE are willfully failing to employ appropriate radium decontamination criteria necessary for unrestricted release of these buildings. We do not believe this would be happening if NRC was exercising its proper regulatory role at the Tonawanda Site.

7.18 18) Since the mismanagement of R-10 residues at the Niagara Falls Storage Site (see pp 1 to 8 of reference 5), we have been concerned that soil cleanup will not be performed properly. Regarding removal of the soil pile at Linde, we raised this issue in our comments on the January 1996 "EE/CA for Praxair Interim Actions" and subsequently we repeated our concerns (see references 66, 15, and 20). It is unclear to us, just how the removal and segregation of contaminated soil was done. In addition, we wonder why NYSDEC, has continued to act as if it has regulatory authority over these 11.e.(2) wastes, after being informed by NRC that it lacked jurisdiction over them (see comment 9 and Administrative Record). We wonder why DOE and ACE are willing to continue this charade.

Future Land Use

7.19 19) Cleanup guidelines should be adjusted to protect future site users. It is unlikely, but certainly not inconceivable, that a resident farmer use could occur on these properties at some time in the future. The land is certainly capable of supporting such use as evidenced by early town history. The Ashland 2 property is re-vegetating nicely and is increasingly attractive to recreationists and wildlife, including deer. We think it is very reasonable to expect that future land uses for these waterfront properties will include various residential suburban occupancy styles, including single family 1-story and 2-story, with or without basement, duplexes, condominiums, etc. Some of these residences are likely to have home vegetable gardens. Simply because the existing use is a less intensive use and the current Town Master Plan does not currently contemplate residential uses in certain areas does not mean such use patterns will not change. Therefore, we think a resident scenario that includes limited food and water ingestion pathways is a reasonable future use and environmental review should include such use.

7.20 20) The revised PP's thorium guideline is not sufficiently protective of such expected future residential users. Under the modeled urban resident use scenario, which assumes no food or water pathways and no clean cover, the proposed site-specific 40 pCi/G Th-230 cleanup guideline (Approach 2) is estimated to result in a dose not including radon inhalation (see comment 22) of 86 millirems/yr. This dose is roughly 9 times the NYSDEC TAGM - 4003 dose guideline of 10 millirems/yr, and certainly not an ALARA dose. With 8 inches of cover, the dose is reduced to an estimated 13 millirems/yr, still in excess of the TAGM; however, cover requires institutional controls (deed restrictions). We have little confidence in the long-term effectiveness of such controls (for even hundreds of years, when the duration of the radioactive hazard is hundreds of thousands of years).

7.21 21) None of the alternatives provide sufficient long-term protectiveness, a fundamental CERCLA requirement. NEPA requires cumulative impacts be fully addressed. We believe the arbitrary 1000 year timeframe employed in the dose calculations and risk analysis is too a short time period to fairly apprise the public of cumulative long-term adverse health impacts. We think a 10,000 year timeframe is more appropriate, as is done for other radioactive wastes. Long-term cumulative dose estimates that consider ongoing radium ingrowth from residual levels of thorium should be provided for all proposed alternatives. Peak doses and risks and their time of occurrence should be presented (see comments 22, and 27).

Radon Doses

7.22 22) We think the 40 pCi/g Th-230 cleanup level allows radon doses from the 11.e.(2) material that are too great. We think that radon doses attributable to the 11.e.(2) material should be calculated and included in the total doses reported to the public. Inhalation of radon gas from uranium mill tailings is the major component of total dose at sites such as the Tonawanda Site, yet it is DOE/ACE policy not to include doses attributable to the tailings in determining compliance with the basic dose guideline. Instead, an effort is made to demonstrate compliance with EPA's 4 pCi/l guideline for radon in indoor air. According to DOE/ACE's industrial worker exposure scenario for the Ashland properties, an industrial worker exposed to EPA's guideline concentration will receive approximately 200 millirems/yr radon dose, with the major portion of this dose coming from the 11.e.(2) waste material left behind (at the 40 pCi/g Th-230 Approach 1 cleanup level). For a typical residential scenario, the radon dose will be approximately 500 to 800 millirems/yr, again with the major dose portion coming from the 11.e.(2) material. In addition, the EPA guideline will be exceeded after 1000 years due to radium ingrowth from the 40 pCi/g residual thorium level. What is the peak indoor radon concentration estimated to be under Approach 2 for the urban resident scenario? When will this peak concentration occur? We believe NRC's approach to this radon problem as embodied in their SDMP program is much more rational and highly preferable.

Costs

7.23 23) The revised PP provides no breakdown of cost components for the implementation of each alternative, as was done in the November 1993 draft FS. The validity of the cost data presented in the FS were subject to intense criticism by the community. The major specific components cited as being inflated were unit transportation costs, unit disposal costs, management overhead, and unreasonably large contingency allowances. An objective, updated supplement to the draft FS providing each revised cost component must be prepared and subjected to public review.

7.24 24) Regarding disposal site costs, the commercial disposal cost (for Envirocare, Clive, Utah) was given in the draft FS as \$216/cubic yard. Why should a private disposal firm which collects large profits, above and beyond actual disposal costs, be used for disposal, when after the

operation closes down in a relatively short while responsibility for the site will revert to the public sector anyway, either state or federal government? It makes no sense to the taxpayer.

7.25 25) We believe the \$270/cubic yard disposal cost given for the Nevada Test Site (p 3-13 of reference 54) is artificially inflated and does not reflect the actual cost of disposal. This same report gives a figure of \$94/cy disposal cost for a hypothetical DOE disposal facility (p 4-3 to 4-7). We believe this figure contains components not applicable to NTS, an operating, federally-owned facility. We request a realistic evaluation of NTS disposal costs be performed by an independent agency such as GAO. We think actual disposal costs at NTS are both significantly less than \$94/cy and significantly less than Envirocare's current charge. (Also see comment 28).

7.26 26) We have criticized the decontamination of buildings at the Linde property as being wasteful, particularly in view of the radium issue (see comment), compared to the less costly demolition of the buildings as prescribed in the community-supported draft FS-EIS's Alternative 2 (all four buildings were to be demolished at a direct cost of approximately \$1.5 million [lines 2a, 2b, and 2c on p G-29]). So far, approximately \$8 million has been spent on building decontamination (see reference 42). We have asked ACE for an updated total of building decontamination costs. Please supply the evaluation referred to in response 8 of enclosure to reference 21. Since "too-high" cost has been frequently cited by DOE as a reason for not employing more stringent sitewide cleanup guidelines, these high interim action costs may prejudice selection of sitewide remedy, and therefore, represent segmentation of the review process.

7.27 27) We are aware of no efforts on the part of DOE to identify potentially responsible parties at the Tonawanda Site (see comment 29). Since such an issue has been made of "too-high" cost by DOE/ACE with respect to thorough, sitewide cleanup, we believe identification of PRPs prior to any cleanup decision is necessary to avoid public perception that cost was the overriding factor in the decision. Also, in response to "too-high" cost claims, we suggest that an objective study be done to estimate the sitewide, long-term (10,000 years) cumulative morbidity and mortality costs associated with Alternative 1 using a limited resident farmer scenario (see comment 19). To put the cleanup cost issue in perspective, we have often pointed out the cost of implementing sitewide Alternative 2 is roughly half the cost of a single space shuttle mission.

Offsite Storage Location

7.28 28) To us, the selection of the most physically suitable long-term storage site for the Tonawanda Site wastes is an essential part of the review process. We raised this issue often at meetings of CANIT and reiterated it in a letter to DOE's James Owendoff (see references 15 and 16). Not all disposal facilities licensed to accept 11.e.(2) material are equivalent in this respect. The best physical location will provide the longest duration of waste isolation and avoid most (if not all) costs of active maintenance (see pp 8, 9 of reference 5).

We believe the playas of the Nevada Test Site to be at least equivalent to Envirocare's Clive, Utah location in these respects. However, DOE has designated Tonawanda Site wastes as "non-defense" wastes which are not eligible for storage at NTS under DOE's current regime. This makes no sense to us or the National Academy of Science's National Research Council (see p 36 of reference 68). (Also see comment 25)

Identification of Potentially Responsible Parties (PRPs)

7.29 29) It is a requirement of CERCLA that potentially responsible parties (PRPs) be identified and pursued for recovery of remediation costs. As far as we know, this has not been done for any of the Tonawanda Site properties. Congress pointedly reiterated this mandate in the Conference Report attached to the FY 1998 Energy and Water Development Appropriations Act, saying "the Corps of Engineers is expected to immediately pursue cost recovery from the responsible parties at FUSRAP sites either through a negotiated settlement or a court action." What are ACE's results in this regard? We expect that this fundamental requirement will be met before any decision is made.

Our research into this issue reveals the following:

With regard to Ashland 1, information we received from the General Services Administration via FOIA in May 1997 shows that the Ashland Oil Company did know of the MED/AEC contamination when they purchased the Haist property at GSA auction through quitclaim deed in 1960 (contrary to DOE's Authority Review document, reference 71), and that before purchasing the property Ashland sought assurance that it would not be held liable for any subsequent decontamination of the property (see references 72, 73). We also note that according to various DOE documents (see references 52, 53) the wastes when deposited in the mid-forties contained approximately 0.54% uranium. Possession of such materials containing 0.05% or more of uranium, by weight, required a license from AEC. We are awaiting receipt via FOIA to DOE Oak Ridge of the 1958 AEC radiological survey report which reportedly formed the basis for free release of the property. Presumably this report will help establish if there were licensable concentrations of uranium present at the time of the sale. If so, does AEC's failure to license the transfer of the MED/AEC wastes to Ashland Oil as required under the applicable 10CFR40 regulations establish some portion of federal liability for the cost of remediation of this property?

With regard to Ashland 2, Ashland Oil Co. transferred wastes from Ashland 1 to both Seaway and Ashland 2 between 1974 and 1982. New York State was the responsible regulator, federal licensing authority over these materials having been delegated by AEC to the state through the 10-15-62 State Agreement (see reference). The NYS Department of Labor reportedly established control over the Ashland MED/AEC wastes by letter dated 9-11-78 (see reference 74). However, transfer of wastes from Ashland 1 to Ashland 2 continued into 1982, according to DOE (draft BRA p 1-10). Does New York's failure to exercise license control over the Ashland 1 materials, thereby allowing Ashland to transfer portions thereof to both the Seaway property and Ashland 2,

establish some portion of state liability for the cost of remediation of these properties? We note that NYS regulatory authority over these materials reverted to NRC late in 1981 (see comment 9), possibly before the transfers to Ashland 2 and Seaway ceased.

With regard to Linde, we have requested via FOIA to DOE Oak Ridge the MED/AEC uranium production contracts with Linde (as they are identified on page 127 of reference 54) and documentation of the decontamination and decommissioning activities performed prior to release of the MED/AEC uranium refinery operations to Linde. As with Ashland 1, presumably this information (contract conditions governing wastes and radiological surveys done before AEC vacated the premises) will help establish the extent of federal liability for remediation at this property, if any. We note that documents uncovered in the course of a New York State Assembly investigation in 1981 seem to indicate federal government liability for radioactive effluent injected into onsite wells and released to surface waters and storm and sanitary sewers (see reference 55).

Environmental Review Process

7.30 30) The Administrative Record contains correspondence between DOE and EPA regarding the hazard ranking system (HRS) score of the Tonawanda Site which shows that based on that ranking the Tonawanda Site should have been placed on the NPL. This was not done. Please explain why the 9-24-87 DOE draft Federal Facilities Agreement was not executed, why EPA did not assume co-lead agency status, and provide EPA's and DOE's documentation of the rationale for why the Tonawanda Site was not placed on the NPL.

7.31 31) The title of the Proposed Plan misidentifies it as "Final". Under NEPA/CERCLA environmental review procedures, documents made available for public comment are identified as "draft" or "public draft". The "final" documents are issued only following the close of the public comment period. The "final" documents should reflect any and all revisions made as a result of the public comments. The revised Proposed Plan should contain text explaining that it is but one part of the total NEPA/CERCLA environmental review package, which includes the draft RI/BRA/FS-EIS documents, on which ACE is seeking comments. NEPA requires that all public comments previously made on the apparently unmodified draft RI/BRA/FS-EIS documents be thoroughly addressed in the final EIS, as well as all current comments on the total review package. NEPA sets specific requirements on the form and content of agency responses to public comments: the final review document must contain a response to comments section in which each comment must be individually identified and paired with a detailed response, unless there are a large number of essentially identical comments.

7.32 32) In issuing the 1988 Notice of Intent to Prepare an Environmental Impact Statement to evaluate alternative remedial actions for the long-term management of Tonawanda Site wastes, DOE determined that "an EIS is the appropriate level of NEPA review necessary to adequately inform decision-makers and the public of reasonable alternatives for

minimizing any adverse impacts of the proposed action" (p 1-5 of the draft RI). In announcing "suspension" of the integrated NEPA/CERCLA public environmental review process in April 1994 and on many subsequent occasions, DOE said that NEPA review was not being terminated at the Tonawanda Site, that thereafter the policy would be to incorporate NEPA values into CERCLA documentation (see references 6 to 17, 20, 21, 23, 24, 43 to 48). DOE has a record of blatantly ignoring NEPA requirements (see pp 1 to 8 of reference 5). The notice issuing this Proposed Plan for public comment (11-13-97 Buffalo News) refers to a DOE policy change ("Secretarial Policy on the National Environmental Policy Act, June 1994") and states that ACE will follow the same policy. We are disappointed that ACE appears to share the DOE view that substantive public review requirements of NEPA can be avoided simply by issuing a non-promulgated policy statement. Was any rulemaking done by either agency to validate these changes? If so, please describe and provide documentation of same.

7.33 33) In announcing the "suspension" of the NEPA/CERCLA integrated public environmental review process in April 1994 and on many subsequent occasions, DOE henceforth committed to provide fully informed participation to all interested members of the public in an open decisionmaking process to select a sitewide remediation plan. However, DOE ceased public work plan meetings after the 2-28-95 meeting, and thereafter dealt almost exclusively with the CANiT politicians. CANiT was awarded a second DOE self-serving TAP grant (see references 22 to 34). There were no public meetings from the time of the public meeting on June 18, 1996 until the CANiT meeting on July 1, 1997 (see references 36 to 47, and 49). During this period of time, the current proposal was secretly negotiated with the CANiT politicians; neither F.A.C.T.S. nor other interested members of the community had access to this decisionmaking process. During this period we filed a complaint against DOE in federal district court in an attempt to obtain information responsive to several of our FOIA requests (see reference FOIAs). With the exception of Praxair, representatives of the property-owner stakeholders have not participated at the public meetings (see comments 29 and 35). DOE's failure to adhere to its 1994 commitment has kept F.A.C.T.S. and the interested public at a substantial informational disadvantage. (see references 15, 17, 23, 24, 35, 36 to 41, 43 to 47, and FOIA). Because of this situation, we requested an indefinite extension of the comment period until this information gap and lag-time could be corrected (see reference 76). It is our understanding that a minimum 30 day extension of the comment period is provided for upon timely request. An eight day (from date of proper notice) extension only was granted.

7.34 34) Excluding Seaway from review and remediation together with the Ashland properties, considering its location between the Ashland properties, makes no sense to us. There are ~~be~~ obvious cost economies of scale in performing remediation of all three properties together. This appears to be a clear violation of the NEPA prohibition against segmentation. What is ACE's current plan for remediation of this property, if there is none, why not?

7.35 35) We have uncovered what we believe is evidence of a possible

indemnification arrangement on the part of DOE in its relations with Browning-Ferris Industries, operator of the Niagara Landfill at the Seaway property. We are very concerned about the negative impact such an arrangement, if consummated, might have on the form of remediation at this property. Information regarding this possibility is one of the matters currently the subject of F.A.C.T.S.' litigation (see FOIA list). What is ACE's knowledge of this matter, if any? This is a matter requiring investigation.

Background Values

7.36 36) Representative area-wide background values for the radionuclides were determined by ORAU. These values are significantly lower than the values from Ashland 2 South that are being used in the calculation of contaminated volumes. We believe the Ashland 2 South values have been biased by their historic proximity to the disposal piles at Ashland 1 and should not be used in calculations to determine removal volumes. The ORAU values given in the draft RI are appropriate.

Source Terms

7.37 37) Please provide estimates of the current source terms for each Tonawanda Site property using all available soil and sediment data. Please provide estimates of the residual source terms for each property following cleanup to 1) the NRC SDMP guidelines, and 2) the 40 pCi/g Th-230 guideline, both approaches.

Miscellaneous Specific Comments

7.38 38) According to DOE, "(i)n general, it is FUSRAP's policy that ownership of 11e(2) byproducts [sic] material at FUSRAP sites remains with the property owner until custody has been transferred to the Department of Energy (DOE)." (see reference 75 and comment 29) We have requested via FOIA to DOE Oak Ridge the legal basis for this policy, both in general terms and in terms specific to the Tonawanda Site properties. This information request is currently being litigated in the U.S. District Court for the Western District of New York (see reference FOIA).

7.39 39) Please confirm that the site-specific guideline for uranium (to meet DOE's 100 millirem/yr basic dose guideline) of 60 pCi/g (28.4 pCi/g U-238) was determined from a resident farmer exposure scenario. The dose/source concentration ratio for the external exposure pathway is given as zero in Table 4 (p 9); is this only a typo? Please clarify exactly what "takes up residence in the immediate vicinity of the Ashland 1 and 2 sites" means (p 5). Does it mean within the decontaminated area or outside of it? We also note that Table 3-1 of the draft FS erroneously implies the U guideline is 60 pCi/g U-238.

List of Reference Documents, Attached to F.A.C.T.S.' Comments on
 "Proposed Plan for the Ashland 1 and Ashland 2 Sites, Tonawanda, New
 York, November 1997, Final", to be added to Administrative Record

- 1) Proposed Tonawanda Work Plan, 10-18-94
- 2) EMAB Briefing on New York FUSRAP Sites, August 22-23, 1995, Tonawanda, NY
- 3) Comments on RI/FS-EIS for the Tonawanda, NY FUSRAP Site, 2-10-94, James M. Rauch
- 4) 9-17-96 letter from NYSDEC Deputy Commissioner David Sterman to DOE West Valley Project Manager Dan Sullivan w/ pages 24 and 25 of enclosure
- 5) 8-24-94 letter from Residents Organized for Lewiston-Porter's Environment (R.O.L.E.) to DOE Secretary Hazel O'Leary
- 6) 10-7-94 letter in response to #5, from DOE's Richard Guimond
- 7) 10-31-94 letter from James Rauch, Timothy Henderson and Jean Dickson to DOE Secretary Hazel O'Leary
- 8) 12-7-94 letter in response to #7, from DOE's Guimond
- 9) 9-10-95 letter from F.A.C.T.S. to DOE Secretary Hazel O'Leary
- 10) 10-6-95 letter in response to #9, from DOE's James W. Wagoner
- 11) 10-10-95 letter from Erie County Department of Environment and Planning Commissioner Richard Tobe to DOE Assistant Secretary Thomas Grumbly
- 12) 10-25-95 letter in response to #11, from DOE's James Fiore w/ enclosure
- 13) 10-24-95 letter from F.A.C.T.S. to DOE's Thomas Grumbly
- 14) 11-13-95 letter in response to #13, from DOE's James Fiore
- 15) 9-28-96 letter from F.A.C.T.S. to DOE's James Owendoff
- 16) Cover letter for copy of #15 sent to Congressman LaFalce
- 17) 11-7-96 letter in response to #15, from DOE's Owendoff
- 18) 3-3-97 letter from F.A.C.T.S. to NYS Department of Labor Commissioner John E. Sweeney w/ enclosures
- 18a) 3-17-97 letter in response to #18, from NYSDOL's John E. Sweeney
- 19) 3-23-97 letter from F.A.C.T.S. to NYSDOL's Sweeney
- 19a) 4-10-97 letter in response to #19, from NYSDOL's Connie J. Varcasia
- 20) 3-4-97 letter from F.A.C.T.S. to DOE Site Manager Dave Adler
- 21) 9-8-97 letter in response to #20, from DOE Site Manager James D. Kopotic w/ enclosure
- 22) 8-22-95 letter from F.A.C.T.S. to DOE Site Manager Ronald E. Kirk w/ attachment
- 23) 3-18-96 FOIL request letter from James Rauch to FOIL officer, Erie County Department of Environment and Planning w/ enclosure
- 24) 4-18-96 letter in response to #23, from David H. Meltzer of ECDEP w/ enclosure
- 25) 9-22-95 letter in response to #22, from DOE Site Manager Ronald E. Kirk
- 26) 9-27-95 letter from F.A.C.T.S. to DOE's Cynthia Kelly w/ enclosures
- 27) 12-1-95 letter in response to #26, from DOE's Carolyn Osborne
- 28) 1-4-96 letter in response to #26, from DOE's James Fiore
- 29) 1-19-96 letter from F.A.C.T.S. to DOE Site Manager Ron Kirk w/ enc.

- 30) 1-31-96 letter in response to #26, from DOE's Lester K. Price
- 31) 8-28-95 letter from Jim Rauch to Marvin Resnikoff, Radioactive Waste Management Associates
- 32) 8-30-95 letter in response to #31, from Resnikoff
- 33) 8-25-92 memorandum from Michael J. Nolan, Concerned Citizens of Maywood to County Executive Wm. "Pat" Schuber
- 34) June 1990 EPA pamphlet "Superfund Technical Assistance Grants"
- 35) 10-16-95 letter from F.A.C.T.S. to CANIT Chairman Richard Tobe
- 36) "FACTS Charges CANIT with Placing Politics Above Environment" Alt/Buffalo Alternative Press, December 1995
- 37) 5-2-96 letter from George B. Melrose to Congressman John J. LaFalce
- 38) 7-3-96 letter in response to #37, from Congressman LaFalce w/ enclosures
- 39) 7-19-96 letter from George B. Melrose to Congressman John J. LaFalce
- 40) 9-10-96 letter in response to #39, from DOE's Richard J. Guimond w/ enclosure
- 41) F.A.C.T.S. Press releases of 8-7-95; 10-5-95; 3-6-96; 3-18-96
- 42) "Shoddy 'Interim' DOE Cleanup Unmasked", article by Jim Rauch, Alt/Buffalo Alternative Press, March 21-April 5, 1997
- 43) 8-1-94 letter from Don Finch to DOE Secretary Hazel O'Leary
- 44) 9-7-94 letter in response to #43, from DOE Site Manager Ron Kirk
- 45) 8-19-96 letter from F.A.C.T.S. to U.S. Attorney General Janet Reno
- 46) 1-7-97 letter in response to #45, from DOE's William E. Murphie
- 47) 1-9-97 letter in response to #45, from EPA's Richard L. Caspe
- 48) 2-18-97 letter from DOE's James J. Fiore to Roger W. Tippy, NYS Office of the Attorney General
- 49) 7-9-97 letter from DOE Site Manager James D. Kopotic to ECDEP's Richard Tobe
- 50) Invitation to Bid No. 14501-129-SC-563, Decontamination and Equipment Relocation of Building 14 - New York Region, Part IV, "Scope of Work and Technical Specifications", inc. Attachment 1
- 51) Invitation to Bid No. 14501-129-SC-563, Decontamination and Equipment Relocation of Building 14 - New York Region, Addendum No. 02, November 18, 1996, Responses to Bidders' Questions, pp 1 of 9 and 3 of 9
- 52) "A Background Report for the Formerly Utilized Manhattan Engineer District/AEC Sites Program", September, 1980, DOE EV-0097, UC-70
- 53) "Description of the Formerly Utilized Sites Remedial Action Program", September, 1980, ORO-777
- 54) "Evaluation of Disposal Options for Wastes Generated During Remediation of Formerly Utilized Sites Remedial Action Program Sites", September 28, 1993; Reference 'SAIC 1993 b' in Draft FS
- 55) Exhibits 3 through 9 from Volume II, Footnotes and Appendix, "The Federal Connection: A History of U.S. Military Involvement in the Toxic Contamination of Love Canal and the Niagara Frontier Region", January 29, 1981, Interim Report to

NYS Assembly Speaker Stanley Fink, NYS Assembly Task Force on Toxic Substances

- 56) 1-19-96 letter from F.A.C.T.S. to John Mitchell, NYSDEC
- 57) 2-29-96 letter from NYSDEC's Paul J. Merges to Craig Gordon, U.S. Nuclear Regulatory Commission
- 58) 3-26-96 letter from F.A.C.T.S. to Dennis Sollenberger, U.S. Nuclear Regulatory Commission, w/ enc.
- 59) 4-23-96 letter from NRC's Craig Z. Gordon to NYSDEC's Paul J. Merges
- 9-4-96 fax from F.A.C.T.S. to NRC's Sollenberger
- 60) 9-6-96 fax from F.A.C.T.S. to NRC's Sollenberger
- 61) 9-30-96 letter from F.A.C.T.S. to Jeffrey L. Bartlett, NRC
- 62) 11-12-96 letter in response to #'s 58, 59, 60, 61, from NRC's Richard L. Bangart
- 63) 12-27-96 letter from F.A.C.T.S. to NRC's Bangart
- 64) 1-30-97 letter from F.A.C.T.S. to NYSDEC's Steve Doleski
- 65) 1-4-98 letter from F.A.C.T.S. to NRC's Bangart
- 66) F.A.C.T.S.' "Comments on 'Engineering Evaluation/Cost Analysis (EE/CA) for Praxair Interim Actions, January 1996', James M. Rauch, March 12, 1996
- 67) F.A.C.T.S.' "Comments on 'Engineering Evaluation/Cost Analysis (EE/CA) for Building 30 at Praxair', November 1996, U.S. Dept. of Energy, James M. Rauch, December 20, 1996
- 68) "Safety of the High-Level Uranium Ore Residues at the Niagara Falls Storage Site, Lewiston, New York", National Research Council of the National Academy of Sciences, 1995
- 69) 1-14-97 letter from NYSDEC's Barbara Youngberg to James Rauch w/o enc.
- 70) 6-1-95 letter from Michael B. Gerrard to DOE Site Manager John Michael Japp
- 71) "Authority Review for the Seaway Industrial Park in Tonawanda, New York", undated, enclosure to document 10 of F.A.C.T.S.' 3-17-96 FOIA request to DOE Oak Ridge
- 72) Documents provided in response to F.A.C.T.S.' FOIA request to GSA
- 73) Documents provided in response to F.A.C.T.S.' FOIA request to GSA
- 74) 6-24-80 letter from NYS Energy Office's John P. Spath to Andrew Wallo, Aerospace Corporation
- 75) Memorandum from DOE's James W. Wagoner II to DOE's L. Price, Subject: Ownership of 11(e)2 Byproduct Material
- 76) 1-1-98 letter from F.A.C.T.S. to ACE's Col. Michael J. Conrad
- 77) 6-7-95 FOIA request from Don Finch to DOE HQ Freedom of Information Officer
- 78) 7-17-95 letter in response to #50, from DOE's GayLa D. Sessions
- 79) 2-17-97 F.A.C.T.S.' FOIA request to DOE Oak Ridge
- 80) "Ashland 1 and Ashland 2 Proposed Plan Public Meeting, December 17, 1997, U.S. Army Corps of Engineers" handout

FOIA list: all F.A.C.T.S. FOIA requests made to DOE, U.S. General Services Administration, and National Archives and Records Administration; all F.A.C.T.S. FOIL requests made to NYS Department of Labor, and NYS Department of Environmental Conservation; and the complete contents of all responses to all of these requests to date.

Attachment to F.A.C.T.S.' Comments on "Proposed Plan for the Ashland 1 and Ashland 2 Sites, Tonawanda, New York, November 1997, Final":
List of reference documents to be added to the Tonawanda Site
Administrative Record

- 1) Proposed Tonawanda Work Plan, 10-18-94
- 2) EMAB Briefing on New York FUSRAP Sites, August 22-23, 1995, Tonawanda, NY
- 3) Comments on RI/FS-EIS for the Tonawanda, NY FUSRAP Site, 2-10-94, James M. Rauch
- 4) 9-17-96 letter from NYSDEC Deputy Commissioner David Sterman to DOE West Valley Project Manager Dan Sullivan w/ pages 24 and 25 of enclosure
- 5) 8-24-94 letter from Residents Organized for Lewiston-Porter's Environment (R.O.L.E.) to DOE Secretary Hazel O'Leary
- 6) 10-7-94 letter in response to #5, from DOE's Richard Guimond
- 7) 10-31-94 letter from James Rauch, Timothy Henderson and Jean Dickson to DOE Secretary Hazel O'Leary
- 8) 12-7-94 letter in response to #7, from DOE's Guimond
- 9) 9-10-95 letter from F.A.C.T.S. to DOE Secretary Hazel O'Leary
- 10) 10-6-95 letter in response to #9, from DOE's James W. Wagoner
- 11) 10-10-95 letter from Erie County Department of Environment and Planning Commissioner Richard Tobe to DOE Assistant Secretary Thomas Grumbly
- 12) 10-25-95 letter in response to #11, from DOE's James Fiore w/ enclosure
- 13) 10-24-95 letter from F.A.C.T.S. to DOE's Thomas Grumbly
- 14) 11-13-95 letter in response to #13, from DOE's James Fiore
- 15) 9-28-96 letter from F.A.C.T.S. to DOE's James Owendoff
- 16) Cover letter for copy of #15 sent to Congressman LaFalce
- 17) 11-7-96 letter in response to #15, from DOE's Owendoff
- 18) 3-3-97 letter from F.A.C.T.S. to NYS Department of Labor Commissioner John E. Sweeney w/ enclosures
- 18a) 3-17-97 letter in response to #18, from NYSDOL's John E. Sweeney
- 19) 3-23-97 letter from F.A.C.T.S. to NYSDOL's Sweeney
- 19a) 4-10-97 letter in response to #19, from NYSDOL's Connie J. Varcasia
- 20) 3-4-97 letter from F.A.C.T.S. to DOE Site Manager Dave Adler
- 21) 9-8-97 letter in response to #20, from DOE Site Manager James D. Kopotic w/ enclosure
- 22) 8-22-95 letter from F.A.C.T.S. to DOE Site Manager Ronald E. Kirk w/ attachment
- 23) 3-18-96 FOIL request letter from James Rauch to FOIL officer, Erie County Department of Environment and Planning w/ enclosure
- 24) 4-18-96 letter in response to #23, from David H. Meltzer of ECDEP w/ enclosure
- 25) 9-22-95 letter in response to #22, from DOE Site Manager Ronald E. Kirk
- 26) 9-27-95 letter from F.A.C.T.S. to DOE's Cynthia Kelly w/ enclosures
- 27) 12-1-95 letter in response to #26, from DOE's Carolyn Osborne

- 28) 1-4-96 letter in response to #26, from DOE's James Fiore
- 29) 1-19-96 letter from F.A.C.T.S. to DOE Site Manager Ron Kirk w/ enc.
- 30) 1-31-96 letter in response to #26, from DOE's Lester K. Price
- 31) 8-28-95 letter from Jim Rauch to Marvin Resnikoff, Radioactive Waste Management Associates
- 32) 8-30-95 letter in response to #31, from Resnikoff
- 33) 8-25-92 memorandum from Michael J. Nolan, Concerned Citizens of Maywood to County Executive Wm. "Pat" Schuber
- 34) June 1990 EPA pamphlet "Superfund Technical Assistance Grants"
- 35) 10-16-95 letter from F.A.C.T.S. to CANIT Chairman Richard Tobe
- 36) "FACTS Charges CANIT with Placing Politics Above Environment" Alt/Buffalo Alternative Press, December 1995
- 37) 5-2-96 letter from George B. Melrose to Congressman John J. LaFalce
- 38) 7-3-96 letter in response to #37, from Congressman LaFalce w/ enclosures
- 39) 7-19-96 letter from George B. Melrose to Congressman John J. LaFalce
- 40) 9-10-96 letter in response to #39, from DOE's Richard J. Guimond w/ enclosure
- 41) F.A.C.T.S. Press releases of 8-7-95; 10-5-95; 3-6-96; 3-18-96
- 42) "Shoddy 'Interim' DOE Cleanup Unmasked", article by Jim Rauch, Alt/Buffalo Alternative Press, March 21 - April 5, 1997
- 43) 8-1-94 letter from Don Finch to DOE Secretary Hazel O'Leary
- 44) 9-7-94 letter in response to #43, from DOE Site Manager Ron Kirk
- 45) 8-15-96 letter from F.A.C.T.S. to U.S. Attorney General Janet Reno
- 46) 1-7-97 letter in response to #45, from DOE's William E. Murphie
- 47) 1-9-97 letter in response to #45, from EPA's Richard L. Caspe
- 48) 2-18-97 letter from DOE's James J. Fiore to Roger W. Tippy, NYS Office of the Attorney General
- 49) 7-9-97 letter from DOE Site Manager James D. Kopotic to ECDEP's Richard Tobe
- 50) Invitation to Bid No. 14501-129-SC-563, Decontamination and Equipment Relocation of Building 14 - New York Region, Part IV, "Scope of Work and Technical Specifications", inc. Attachment 1
- 51) Invitation to Bid No. 14501-129-SC-563, Decontamination and Equipment Relocation of Building 14 - New York Region, Addendum No. 02, November 18, 1996, Responses to Bidders' Questions, pp 1 of 9 and 3 of 9
- 52) "A Background Report for the Formerly Utilized Manhattan Engineer District/AEC Sites Program", September, 1980, DOE EV-0097, UC-70
- 53) "Description of the Formerly Utilized Sites Remedial Action Program", September, 1980, ORO-777
- 54) "Evaluation of Disposal Options for Wastes Generated During Remediation of Formerly Utilized Sites Remedial Action Program Sites", September 28, 1993; Reference 'SAIC 1993 b' in Draft FS

- 55) Exhibits 3 through 9 from Volume II, Footnotes and Appendix, "The Federal Connection: A History of U.S. Military Involvement in the Toxic Contamination of Love Canal and the Niagara Frontier Region", January 29, 1981, Interim Report to NYS Assembly Speaker Stanley Fink, NYS Assembly Task Force on Toxic Substances
- 56) 1-19-96 letter from F.A.C.T.S. to John Mitchell, NYSDEC
- 57) 2-29-96 letter from NYSDEC's Paul J. Merges to Craig Gordon, U.S. Nuclear Regulatory Commission
- 58) 3-26-96 letter from F.A.C.T.S. to Dennis Sollenberger, U.S. Nuclear Regulatory Commission, w/ enc.
- 59) 4-23-96 letter from NRC's Craig Z. Gordon to NYSDEC's Paul J. Merges
- 60) 9-4-96 fax from F.A.C.T.S. to NRC's Sollenberger
- 61) 9-6-96 fax from F.A.C.T.S. to NRC's Sollenberger
- 62) 9-30-96 letter from F.A.C.T.S. to Jeffrey L. Bartlett, NRC
- 63) 11-12-96 letter in response to #'s 58, 60, 61, and 62 from NRC's Richard L. Bangart
- 64) 12-27-96 letter from F.A.C.T.S. to NRC's Bangart
- 65) 1-30-97 letter from F.A.C.T.S. to NYSDEC's Steve Doleski
- 66) 1-4-98 letter from F.A.C.T.S. to NRC's Bangart
- 67) F.A.C.T.S.' "Comments on 'Engineering Evaluation/Cost Analysis (EE/CA) for Praxair Interim Actions, January 1996', James M. Rauch, March 12, 1996
- 68) F.A.C.T.S.' "Comments on 'Engineering Evaluation/Cost Analysis (EE/CA) for Building 30 at Praxair', November 1996, U.S. Dept. of Energy, James M. Rauch, December 20, 1996
- 69) "Safety of the High-Level Uranium Ore Residues at the Niagara Falls Storage Site, Lewiston, New York", National Research Council of the National Academy of Sciences, 1995
- 70) 1-14-97 letter from NYSDEC's Barbara Youngberg to James Rauch w/ enc.
- 71) 6-1-95 letter from Michael B. Gerrard to DOE Site Manager John Michael Japp
- 72) "Authority Review for the Seaway Industrial Park in Tonawanda, New York", undated, enclosure to document 10 of FOI list 1a
- 73) Selected documents from U.S. General Services Administration response to F.A.C.T.S.' FOIA request
- 74) 6-24-80 letter from NYS Energy Office's John P. Spath to Andrew Wallo, Aerospace Corporation, document 14 of FOI list 1a
- 75) Memorandum from DOE's James W. Wagoner II to DOE's L. Price, Subject: Ownership of 11(e)2 Byproduct Material
- 76) 1-1-98 letter from F.A.C.T.S. to USACE's Col. Michael J. Conrad
- 77) "CANiT Politicians Flip-Flop on Cleanup at Tonawanda Nuclear Site", article by Jim Rauch, Alt/Buffalo Alternative Press, September 25 - October 9, 1996
- 78) "Ashland 1 and Ashland 2 Proposed Plan Public Meeting, December 17, 1997, U.S. Army Corps of Engineers" handout
- 79) "Difficulty of Isolating Residual HLW in Tank(s) at West Valley", September 14, 1997, Raymond C. Vaughan, Coalition on West Valley Nuclear Wastes
- 80) "Radionuclide Cleanup Guideline Derivation for Ashland 1, Ashland 2, and Seaway, Tonawanda, New York, September 1997"

FOI list 1:

- a) Documents provided in response to item 3 of F.A.C.T.S. 3-17-96 FOIA request to DOE Oak Ridge (OR 96-047) and 10-7-96 appeal
- b) Documents provided in response to item 1 of F.A.C.T.S.' 2-4-97 FOIA request to DOE Oak Ridge (OR 97-021), NOTE: This item is the subject of litigation in Federal District Court, see Vaughn Index of documents withheld in entirety
- c) Letters provided by NYSDEC Region 9:
 - 1) 11-3-94 letter from DOE's Ron Kirk to BFI's Robert Hughes
 - 2) 11-29-93 letter from DOE's Ron Kirk to NYSDEC's Yavuz Erk
 - 3) 7-19-93 letter from NYSDEC's Paul D. Eismann to NLI's Paul Barley
 - 4) 2-6-95 letter from BFI's Robert D. Hughes to NYSDEC's Paul Merges
 - 5) 2-23-95 letter from NYSDEC's Paul J. Merges to BFI's Robert D. Hughes

FOI list 2: Documents provided in response to Mr. Don Finch's 12-6-96 and 1-31-97 FOIL requests to NYS Department of Labor (File No. 96-0695)

FOI list 3: Documents provided in response to F.A.C.T.S.' 2-1-97 FOIA request to U.S. General Services Administration (R2-97-029, property B-NY-543)

FOI list 4: Documents requested in items 4 and 5 of F.A.C.T.S.' 9-3-97 FOIA request to DOE Oak Ridge (OR 97-206)

FOI list 5:

- a) Documents requested in item 2 of Mr. Don Finch's 6-7-95 FOIA request to DOE Headquarters (9506130002)
- b) Documents requested in item 2 of F.A.C.T.S.' 11-23-96 FOIA request to DOE Oak Ridge (OR 96-209), NOTE: This item is the subject of litigation in Federal District Court
- c) Documents requested in F.A.C.T.S.' 3-5-97 FOIA request to DOE Oak Ridge

5.7 Responses to F.A.C.T.S. Comments

- 7.1 – USACE is addressing the Ashland sites pursuant to the Energy and Water Development and Appropriations Act of 1998, P.L. 105-62, and in compliance with CERCLA, as amended, and the NCP.
- 7.2 – USACE can not address the activities of other federal agencies prior to the enactment of the Energy and Water Development Appropriations Act of 1998, PL. 105-62, which transferred the responsibility for administration and execution of FUSRAP, including FUSRAP actions at the Ashland sites, to USACE.
- 7.3 – The Energy and Water Development Appropriations Act of 1998, P.L. 105-62, transferred the responsibility for the administration and execution of FUSRAP from DOE to USACE. USACE is proceeding with the remediation of the Ashland sites in accordance with CERCLA (42 U.S.C. 9604 et seq.).
- 7.4 – The Energy and Water Development Appropriation Act of 1998, PL. 105-62, transferred the responsibility for and control over the administration and execution of FUSRAP to USACE. USACE is proceeding with the remediation of FUSRAP sites pursuant to CERCLA (42 U.S.C. 9604 et seq.).
- 7.5 – USACE can not address the activities of other federal agencies prior to the enactment of the Energy and Water Development Appropriations Act of 1998, PL. 105-62, which transferred the responsibility for administration and execution of FUSRAP to USACE. Concerns about other Tonawanda sites will be addressed when action is proposed at those specific sites. The public will continue to be informed of schedules and actions at the other Tonawanda FUSRAP sites through the continued implementation of the Community Relations Plan.
- 7.6 – A concern was raised over the apparent change in average concentrations of soils to be remediated at the Ashland sites between the RI report and subsequent presentations. The averages shown on RI page 4-159 are based upon the “short list” of data shown in the associated tables (4-24 and 4-42). When these short list data locations are plotted on the site drawings, they include only those borings located in the more highly impacted portions of the sites. The averages used in subsequent presentations are based upon the full data set for each of the sites (found in Tables A-10 & A-15 and A-12 & A-17). These full data sets contain approximately 1.5 times the data that is in the short lists. Since the full data sets include the lower readings from the “non-impacted” portions of the sites, the averages are lower.
- 7.7 – The revised PP for the Ashland sites is one component of the CERCLA documentation of the remediation of the Tonawanda Site as a whole. The document distributed for public comment represents the final version of the revised PP, based on the RI/FS published in 1993 and comments received on that document relevant to the Ashland sites, the guideline derivation document published in July 1997, and the USACE version (Alternative 2A) of the originally stated Alternative 2 in the 1993 PP. The USACE Alternative 2A is equivalent to the Alternative 2 developed by the DOE except that a site-specific guideline is used instead of the generic guidelines.

- 7.8 - Additional documents that should be considered for inclusion in the Administrative Record, identified and provided, have been placed in the record, as attachments to the comments received. All other appropriate documents have been included in the Administrative Record as well.
- 7.9 - NRC has stated that they do not have jurisdiction over wastes created by MED prior to November 1978. NRC's jurisdiction over byproduct materials began in 1978 and they do not consider it to be retroactive to the time frame when MED material was generated.
- 7.10 - Because NRC does not have jurisdiction over MED wastes created prior to November 1978, USACE is not required to obtain an NRC license for the materials at the Ashland sites.
- 7.11 - Because NRC does not have jurisdiction over MED wastes created prior to November 1978, the Sites Decommissioning Management Plan does not apply to the Ashland sites.
- 7.12 - Cleanup criteria for the Ashland sites were developed using the CERCLA process. The cleanup criteria must satisfy the CERCLA acceptable risk range as well as the ARARs. The Th-230 guideline development considered intended and reasonable future land use, the likely maximum exposed individuals, and the criteria included in the ARARs. The key ARARs included EPA 40 CFR 192 and NRC 10 CFR 20. The result of the guideline development effort was a cleanup criteria of 40 pCi/g Th-230.

The guideline derivation demonstrated that the conditions at the site, after removing soils exceeding the site-specific derived guideline of 40 pCi/g Th-230, will be protective of human health and the environment, meet the ARARs, and meet the acceptable CERCLA risk range established by the USEPA in the NCP. The analysis also demonstrated that at this cleanup criteria level, the estimated doses to receptors for the intended land uses (commercial/industrial) meet the objectives defined in the to be considered (TBC) guideline of 10 mrem/yr (NYSDEC TAGM 4003) for intended land use.

- 7.13 - These concerns will be addressed when action is proposed at those specific sites. The public will continue to be informed of schedules and actions at the other Tonawanda FUSRAP sites through the continued implementation of the Community Relations Plan.
- 7.14 - In a March 27, 1998 letter to NYSDEC, USACE responded to NYSDEC questions about groundwater concentrations resulting from residual radioactive contamination at the Ashland sites (USACE 1998). The USACE response described the use of USEPA's VLEACH model to estimate the leaching of radionuclides to groundwater after the sites are remediated in accordance with the site-specific cleanup guideline of 40 pCi/g Th-230 derived from the Ashland sites (DOE 1997).

The modeling used estimated concentrations of total uranium, Ra-226 and Ra-228 and Th-230 (DOE 1997) to remain on the Ashland sites after cleanup to site-specific guidelines and very conservative assumptions concerning the solubilities of the radiologically contaminated source material. The results of modeling showed that the resulting concentrations of the radionuclides in groundwater would be below federal drinking water standards that have been calculated to be protective of human health and the environment at levels less than 10^{-6} for increased cancer risk.

Based on the conclusions concerning geological conditions that indicate that contaminant leachate from the Ashland properties are not likely to reach groundwater (BNI 1993), and the prediction using the VLEACH model showing radionuclides at levels in groundwater below drinking water standards (USACE 1998), it was concluded that risks to groundwater from radiological contamination will be minimal after the cleanup at the Ashland properties to the site-specific guidelines.

- 7.15 - Documentation relating to calculations used in the cost evaluation of the investigated remedial alternatives (including volume estimates) have been placed in the Administrative Record and are available for public review. A major component of the cost analysis is the volume of the soils determined to require removal and disposal. The cost estimates used for the development of the revised PP used volumes calculated based on a model of the site contamination generated using existing soil contamination characterization results from all historical sampling conducted at the site. The calculations and results of the modeling have also been placed in the document repository for public review and are part of the Administrative Record. It should be noted, however, that the cleanup of the Ashland sites will not be driven by any previous or future volume estimates generated by modeling site conditions. The cleanup of these sites will be driven by the established cleanup criteria. The cost estimates and their corresponding volume estimates were generated and used in the CERCLA process to help select the most cost effective and protective alternative for remediating the sites, also considering commitments made to the community concerning the ultimate disposal of waste removed from the sites. The volumes ultimately removed and actual remediation costs will vary as the soils found to require removal during the remediation process are excavated and shipped off-site for disposal.
- 7.16 - These concerns will be addressed when action is proposed at those specific sites. The public will continue to be informed of schedules and actions at the other Tonawanda FUSRAP sites through the continued implementation of the Community Relations Plan.
- 7.17 - These concerns will be addressed when action is proposed at those specific sites. The public will continue to be informed of schedules and actions at the other Tonawanda FUSRAP sites through the continued implementation of the Community Relations Plan.
- 7.18 - These concerns will be addressed when action is proposed at those specific sites. The public will continue to be informed of schedules and actions at the other Tonawanda FUSRAP sites through the continued implementation of the Community Relations Plan.
- 7.19 - Cleanup criteria for the Ashland sites were developed using the CERCLA process. The cleanup criteria must satisfy the CERCLA acceptable risk range as well as the ARARs. The Th-230 guideline development considered intended and reasonable future land use, the likely maximum exposed individuals, and the criteria included in the ARARs. The key ARARs included EPA 40 CFR 192 and NRC 10 CFR 20. The result of the guideline development effort was a cleanup criteria of 40 pCi/g Th-230.

The guideline derivation demonstrated that the conditions at the site, after removing soils exceeding the site-specific derived guideline of 40 pCi/g Th-230, will be protective of human health and the environment, meet the ARARs, and meet the acceptable CERCLA risk range established by the USEPA in the NCP. The analysis also demonstrated that at this cleanup

criteria level, the estimated doses to receptors for the intended land uses (commercial/industrial) meet the objectives defined in the to be considered (TBC) guideline of 10 mrem/yr (NYSDEC TAGM 4003) for intended land use.

- 7.20 – As mentioned, dose considerations from DOE, NRC, and NYSDEC were considered in the evaluation of possible Th-230 concentration guidelines. By removing soils exceeding the site-specific derived guideline of 40 pCi/g Th-230, doses to future industrial workers are calculated to be lower than the most conservative criteria considered (NYSDEC) and will also meet criteria for indoor radon concentrations, total radium concentrations, and lifetime risk.

The calculated dose for intended future land use is 7 mrem/yr, which is below the NYSDEC 10 mrem/yr guideline. The dose estimate for a hypothetical non-farming resident at the Ashland sites was also calculated. This dose was estimated to be approximately 20 mrem/yr, which is less than the recently promulgated NRC criteria of 25 mrem/yr, and much less than the value of 86 mrem/yr as stated by one of the commenters.

- 7.21 – The remedy will be protective of human health and the environment, including ecological receptors at the site. Because the primary contaminant is Th-230 (with a 77,000 yr half-life), radon concentration will peak well into the future. However, the radon and radium concentrations estimated for the site after remediation are within acceptable limits over the required 1,000 year review period (40 CFR 192), the maximum time period to be modeled according to regulations, and are not anticipated to be of concern given the site history, configuration, and intended land use.

- 7.22 – As mentioned, dose considerations from DOE, NRC, and NYSDEC were considered in the evaluation of possible Th-230 concentration guidelines. By removing soils exceeding the site-specific derived guideline of 40 pCi/g Th-230, doses to future industrial workers are calculated to be lower than the most conservative criteria considered (NYSDEC) and will also meet criteria for indoor radon concentrations, total radium concentrations, and lifetime risk.

The calculated dose for intended future land use is 7 mrem/yr, which is below the NYSDEC 10 mrem/yr guideline. The dose estimate for a hypothetical non-farming resident at the Ashland sites was also calculated. This dose was estimated to be approximately 20 mrem/yr, which is less than the recently promulgated NRC criteria of 25 mrem/yr, and much less than the value of 86 mrem/yr as stated by one of the commenters.

- 7.23 – Documentation relating to calculations used in the cost evaluation of the investigated remedial alternatives (including volume estimates) have been placed in the Administrative Record and are available for public review. A major component of the cost analysis is the volume of the soils determined to require removal and disposal. The cost estimates used for the development of the revised PP used volumes calculated based on a model of the site contamination generated using existing soil contamination characterization results from all historical sampling conducted at the site. The calculations and results of the modeling have also been placed in the document repository for public review and are part of the Administrative Record.

- 7.24 – Disposal options for excavated soil are evaluated in the site's detailed cost estimate. These cost estimates are available and have been entered in the administrative record. CERCLA provides

that cost is a criteria for evaluation of remedial alternatives, but that it may only be used to compare those remedial alternatives which are protective of human health and the environment and which will comply with ARARs. Among the alternatives considered, the selected remedy is the lowest cost which is both adequately protective and complies with ARARs. Appropriate disposal facilities were evaluated under DOE and are being evaluated by USACE in an effort to reduce cost without compromising the final remedy. The selection of the ultimate disposal site will be addressed as part of the Remedial Action phase of the cleanup using the standard government procurement procedure after completion of the remedial design and prior to commencement of the remedial action.

To assure that estimates do not drastically underestimate actual costs, it is assumed that soils exceeding the cleanup guideline will be excavated and shipped to an off-site disposal facility in the western portion of the United States. The cost of disposal per cubic yard is a negotiated cost and is not intentionally inflated or misrepresented in cost estimates. The ultimate goal of each cost estimate is to allow USACE to accurately project funding requirements for activities such as the remediation of the Ashland sites. It is not beneficial to underestimate or overestimate potential disposal costs.

- 7.25 - The selection of the ultimate disposal site will be addressed as part of the Remedial Action phase of the cleanup using the standard government procurement procedure after completion of the remedial design and prior to commencement of the remedial action.
- 7.26 - These concerns will be addressed when action is proposed at those specific sites. The public will continue to be informed of schedules and actions at the other Tonawanda FUSRAP sites through the continued implementation of the Community Relations Plan.
- 7.27 - USACE has begun to research issues regarding PRPs and will pursue all appropriate means to seek reimbursement from responsible parties on behalf of the Federal Government. However, at this time, no decisions have been made regarding specific parties to pursue nor have offers of indemnification been made by USACE to resolve any liabilities that the Federal Government may have.
- 7.28 - The selection of the ultimate disposal site will be addressed as part of the Remedial Action phase of the cleanup using the standard government procurement procedure after completion of the remedial design and prior to commencement of the remedial action.
- 7.29 - USACE has begun to research issues regarding PRPs and will pursue all appropriate means to seek reimbursement from responsible parties on behalf of the Federal Government. However, at this time, no decisions have been made regarding specific parties to pursue nor have offers of indemnification been made by USACE to resolve any liabilities that the Federal Government may have.
- 7.30 - If a release scores sufficiently high pursuant to the Hazardous Ranking System, it may be considered for placement on the NPL. The final decision to include a particular release rests with USEPA after they have done an analysis of the available information. USACE is not aware of the specific reason why USEPA chose not to include the Ashland sites on the NPL. A Federal

Facility Agreement is only required pursuant to Section 120(e) of CERCLA, as amended (42 U.S.C. 9620(e)) when a facility is placed on the NPL.

- 7.31 - The revised PP for the Ashland sites is one component of the CERCLA documentation of the remediation of the Tonawanda Site as a whole. The document distributed for public comment represents the final version of the revised PP, based on the RI/FS published in 1993 and comments received on that document relevant to the Ashland sites, the guideline derivation document published in July 1997, and the USACE version (Alternative 2A) of the originally stated Alternative 2 in the 1993 PP. The USACE Alternative 2A is equivalent to the Alternative 2 developed by the DOE except that a site-specific guideline is used instead of the generic guidelines.
- 7.32 - USACE is addressing all FUSRAP sites, including the Ashland sites pursuant to the authority of the Energy and Water Development Act of 1998, P.L. 105-62, and in compliance with CERCLA (42 U.S.C. 9601 et seq.) and the NCP (40 CFR Part 300). Additionally, in accordance with 32 CFR 651.8, USACE has and will integrate appropriate NEPA procedures into the process required by CERCLA. The CERCLA process is deemed to satisfy the requirements of NEPA.
- 7.33 - The 1998 Energy and Water Appropriations Bill transferred administration and execution of FUSRAP to USACE from the DOE, the Buffalo District assumed responsibility for issuing the PP for the Ashland sites. Prior to releasing the PP for public comment, USACE reviewed community concerns to maximize stakeholder opportunity to participate in the decision-making process. Mindful of the concerns about limited public participation in development of the PP, USACE prepared a communications plan for release of the PP. The activities detailed in that communications plan are listed in Section 2, Overview of Public Involvement. The public involvement opportunities offered by USACE were intended to encourage public participation in the CERCLA decision process, and they do meet the requirements of CERCLA, as amended, and the NCP.

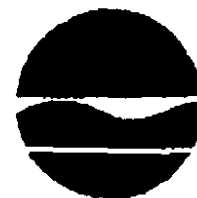
When FUSRAP was transferred to USACE, Lieutenant Colonel Michael Conrad, Commander of the Buffalo District, met with all key stakeholders for the Ashland sites. Three representatives from F.A.C.T.S. were included in this meeting. Representatives of this group also submitted comments, both at the public meeting and in writing. Their concerns, as stated in these comments to USACE, have been considered in the decision regarding the remedy selection, and the responses are included in this Responsiveness Summary.

- 7.34 - USACE is addressing all FUSRAP sites, including the Ashland sites, pursuant to the authority of the Energy and Water Development Act of 1998, P.L. 105-62, and in compliance with CERCLA (42 U.S.C. 9601 et seq.) and the NCP (40 CFR Part 300). Additionally, in accordance with 32 CFR 651.8, USACE has and will integrate appropriate NEPA procedures into the process required by CERCLA. The CERCLA process is deemed to satisfy the requirements of NEPA.

Before proposing the plan to remediate the Ashland sites, USACE carefully considered the program management principles set forth in NCP, 40 CFR 300.430. Based on those goals it was determined that it was appropriate to remediate the Ashland sites to achieve significant risk reduction quickly while the remainder of the Tonawanda sites are being addressed and to expedite the completion of the total cleanup.

- 7.35 – These concerns will be addressed when action is proposed at those specific sites. The public will continue to be informed of schedules and actions at the other Tonawanda FUSRAP sites through the continued implementation of the Community Relations Plan.
- 7.36 – Site data were used in dose and risk calculations to calculate the Th-230 guideline value for Alternative 2A. This data included radiological data collected during the RI activities and stored in the site database. Other studies have been performed (specifically referencing the ORAU study) that could be used in dose and risk estimates. This data and the appropriate quality assurance and quality control information is not, however, maintained in the site database. Considering that the site database already contains data from hundreds of samples, it was not considered appropriate or necessary to incorporate the ORAU (or other) uncontrolled data.
- 7.37 – Estimates of the radionuclide concentrations were made for the Ashland Sites using all available Ashland and Seaway data. The first estimate was the average concentrations for the site in the current state before any removal actions are initiated. The average concentrations (95% UCL of Mean), including background, for Ra-226, Th-230, and U-238 were 8.59 pCi/g, 111 pCi/g, 27.2 pCi/g, respectively. After removing soils with Th-230 > 40 pCi/g, the average concentrations (95% UCL of Mean), including background, of the remaining soils were estimated for Ra-226, Th-230, and U-238 to be 1.22 pCi/g, 12.4 pCi/g, and 6.26 pCi/g, respectively. The DOE had considered another approach for remediation that would have resulted in a 2-meter thick soil layer with a uniform soil concentration of 40 pCi/g Th-230. Under this approach, the average concentrations of the remaining soils were estimated for Ra-226, Th-230, and U-238 to be 2.7 pCi/g, 40 pCi/g, and 8.8 pCi/g, respectively. This approach is not being considered by USACE.
- 7.38 – USACE cannot respond to statements concerning DOE's policies or DOE's response to Freedom of Information Act requests.
- 7.39 – A uranium guideline of 60 pCi/g total U was previously developed for all of the Tonawanda sites in 1988 by ANL for the DOE. For the Ashland sites, this guideline is superseded by the 40 pCi/g Th-230 guideline. The Th-230 guideline was developed specifically for the Ashland sites taking into account the intended land uses and the effects of all the radionuclides at their relative distribution at the Th-230 guideline value. At this value, the U-238 concentration remaining at the site is expected to be well below the previously derived guideline. The Th-230 guideline was developed using conservative exposure parameters and assumptions, and used site specific data.

New York State Department of Environmental Conservation
Division of Solid & Hazardous Materials
50 Wolf Road, Albany, New York 12233-7250
Phone: 518-457-6934 Fax: 518-457-0629



John P. Cahill
Commissioner

JAN 09 1998

VIA FAX AND MAIL

Lt. Col. Michael J. Conrad, Jr.
U.S. Army Engineering District, Buffalo District
1776 Niagara Street
Buffalo, New York 14207-3199

Dear Colonel Conrad:

Re: Proposed Plan for the Ashland 1 and Ashland 2 Sites, Tonawanda, NY

The New York State Department of Environmental Conservation has reviewed the United States Army Corps of Engineers' (US ACE) November 1997 Proposed Plan for the Ashland 1 and Ashland 2 sites in Tonawanda, New York. Here are our comments:

- 8.1
- 1) As a general comment, since the proposed plan addresses Seaway Area D, this should be documented in the title.
- 8.2
- 2) On page 2 in the section entitled "Site Background," the Tonawanda landfill should be mentioned as a vicinity property to the Linde site, and should be included as part of the Tonawanda site.
- 8.4 8.3
- 3) While it is understood that the supporting documents are contained in the administrative record file for the sites which can be found at the Public Information Center and Tonawanda Public Library, the analyses supporting the 40 pCi/g thorium-230 release criteria should have been presented in this document. Although the United States Department of Energy (DOE) printed a final "Radionuclide Cleanup Guideline Derivation for Ashland 1, Ashland 2, and Seaway" in September 1997, this proposed cleanup criterion was never distributed for public review and comment. This Department reviewed a second draft of the document, dated November 1996, and discussed several questions with DOE before the program was transferred to US ACE. Some of the issues we raised were addressed in the September 1997 final document; however, we only received a copy on December 24, 1997. We have not had adequate time to review it. Other

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issues, which we have discussed with both DOE and US ACE, regarding

Lt. Col. Michael J. Conrad, Jr.

2.

8.5 | groundwater are still outstanding. We will provide our analysis of the proposed cleanup criterion once we have received the additional information on groundwater, which US ACE has agreed to provide.

- 8.6 | 4) This proposal addresses only part of the Tonawanda FUSRAP site. Any remedial measure selected for Ashland 1, Ashland 2, and Seaway D is not likely to physically or technically preclude one or more remedial measures for the rest of the site. However, to avoid any adverse effects of segmenting this project, the US ACE should assess whether there are any economic impacts to planning the remediation of Ashland 1 and 2 and Seaway D separately from Linde, Seaway A, B, and C, and the Tonawanda landfill. There may be cost savings in seeking one contract for disposal of all wastes from the Tonawanda FUSRAP site.
- 8.7 | 5) Table 1 on page 10 presents revised implementation costs for each alternative. We request a copy of the analyses that form the basis for these revised estimates, including the "more detailed analysis of volumes of soils containing radionuclides above generic and site-specific guidelines."

As noted above, we will provide analysis of proposed criteria and we also have to resolve issues relative to groundwater. Thank you for the opportunity to review and comment on this document. If you have any questions, or need further information, please have your staff contact John Mitchell, of my staff, at (518) 457-2225.

Sincerely,



Norman H. Nosenchuck, P.E.

Director

Division of Solid & Hazardous Materials

5.8 Responses to NYSDEC Comments

8.1 – Comment noted, changes made.

8.2 – USACE is aware of the Tonawanda Landfill site, is evaluating the appropriate approach to response, and will be in communication with the landfill owner and operator regarding any response actions. USACE will address additional vicinity properties as designations are made.

8.3 – Cleanup criteria for the Ashland sites were developed using the CERCLA process. The cleanup criteria must satisfy the CERCLA acceptable risk range as well as the ARARs. The Th-230 guideline development considered intended and reasonable future land use, the likely maximum exposed individuals, and the criteria included in the ARARs. The key ARARs included EPA 40 CFR 192 and NRC 10 CFR 20. The result of the guideline development effort was a cleanup criteria of 40 pCi/g Th-230.

The guideline derivation demonstrated that the conditions at the site, after removing soils exceeding the site-specific derived guideline of 40 pCi/g Th-230, will be protective of human health and the environment, meet the ARARs, and meet the acceptable CERCLA risk range established by the USEPA in the NCP. The analysis also demonstrated that at this cleanup criteria level, the estimated doses to receptors for the intended land uses (commercial/industrial) meet the objectives defined in the to be considered (TBC) guideline of 10 mrem/yr (NYSDEC TAGM 4003) for intended land use.

8.4 – Documentation relating to calculations used in the cost evaluation of the investigated remedial alternatives (including volume estimates) have been placed in the Administrative Record and are available for public review. A major component of the cost analysis is the volume of the soils determined to require removal and disposal. The cost estimates used for the development of the revised PP used volumes calculated based on a model of the site contamination generated using existing soil contamination characterization results from all historical sampling conducted at the site. The calculations and results of the modeling have also been placed in the document repository for public review and are part of the Administrative Record.

8.5 – In a March 27, 1998 letter to NYSDEC, USACE responded to NYSDEC questions about groundwater concentrations resulting from residual radioactive contamination at the Ashland sites (USACE 1998). The USACE response described the use of USEPA's VLEACH model to estimate the leaching of radionuclides to groundwater after the sites are remediated in accordance with the site-specific cleanup guideline of 40 pCi/g Th-230 derived from the Ashland sites (DOE 1997).

The modeling used concentrations of total uranium, Ra-226 and Ra-228 and Th-230 estimated by DOE (DOE 1997) to remain on the Ashland properties after cleanup to site-specific guidelines and very conservative assumptions concerning the solubilities of the radiologically contaminated source material. The results of modeling showed that the resulting concentrations of the radionuclides in groundwater would be below federal drinking water standards that have been calculated to be protective of human health and the environment at levels less than 10^{-6} for increased cancer risk.

Based on the conclusions concerning geological conditions that indicate that contaminant leachate from the Ashland properties are not likely to reach groundwater (BNI 1993), and the prediction using the VLEACH model showing radionuclides at levels in groundwater below drinking water standards (USACE 1998), it was concluded that risks to groundwater from radiological contamination will be minimal after the cleanup at the Ashland properties to the site-specific guidelines.

- 8.6 – Before proposing the plan to remediate the Ashland sites, USACE carefully considered the program management principles set forth in the NCP - 40 CFR 300.430. Based on those goals it was determined that it was appropriate to remediate the Ashland sites to achieve significant risk reduction quickly while the remainder of the Tonawanda sites are being addressed and to expedite the completion of the total cleanup. It was also determined that the cleanup of the Ashland sites will not be inconsistent with nor preclude implementation of the final remedies at the remaining Tonawanda sites. Pursuant to that determination, and consistent with the NCP, 40 CFR 300.430(f)(2), the decision was made to propose a plan to remediate Ashland at this time and prior to proposing remedies at other Tonawanda sites.

- 8.7 – Information provided.

Friday, January 9, 1998

Michael S. Conrad, Jr.

Lieutenant Colonel, U.S. Army

FUSRAP Public Information Center

70 Pearce Avenue

Tonawanda, N.Y. 14150

Dear Colonel Conrad,

Please consider this letter as my public comment regarding the latest proposal to clean-up the left-over WWII radioactive waste from all of the Tonawanda Sites.

As a citizen living in the Town of Tonawanda, I have three major concerns:

- (1) Can the radioactive waste be cleaned-up safely, without increasing the exposure risk over what it already is, to workers or citizens living nearby?
- (2) Will the radioactive waste be completely removed using a zero-tolerance level for radiation exposure after the clean-up, so that the land can be re-used for any purpose, including growing food to eat?
- (3) Will the radioactive waste now buried under tons of everyday garbage at the Niagara Landfill (Seaway site), be completely removed, so that only the issue of dealing with the methane gas from everyday garbage will be required, versus the present dilemma of dealing with both methane gas and radon gas?

9.3

9.2

9.1

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JAN 12 1998

USACE Buffalo District
Tonawanda FUSRAP Office

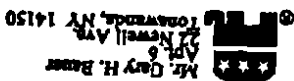
(716) 694-0393

14150

Tonawanda, N.Y.

22 Newell Apt. 6

Gary H. Bauer



Sincerely,
 Don W. Brown

the future.

Although I strongly agree that the radioactive waste should be completely removed and shipped to a safe, licensed storage space (like Clive, Utah) until science research and technology can render the waste harmless to the environment, it is equally important that all of the radioactive waste is safely and completely removed, so that the land can be re-used for any purpose without harm to humans in the future.

a yes.

Also, proposed Town of Tonawanda new, waterfront development should not occur during the radioactive waste clean-up and should not occur at all unless the clean-up concerns can all be answered with a yes.

nothing - it is worse;

Because of the exposure risk involved with a radioactive waste clean-up, it is extremely important that any effort to improve health conditions be done with caution and safety, and most importantly, be done right the first time, so that future generations do not have to deal with the same problem. In the case of radioactive waste clean-ups, doing something is not better than doing nothing - it is worse;

a yes.

If the answer to any of the three concerns is no, then any attempt to clean-up the radioactive waste should be placed on hold until all three concerns can reasonably be answered with a yes.

5.9 Responses to Bauer Comments

- 9.1 – For remediation at the Ashland sites, the remediation contractor will develop, implement and have available for audit, a minimum number of work plans which will be able to demonstrate compliance with USACE requirements: Ionizing Radiation Protection, ER 385-1-80; Radiation Protection Manual, EM 385-1-80; Safety and Occupational Health Document Requirements for HTRW and OEW Activities, ER 385-1-92 (Appendix B); Safety and Health Requirements Manual, EM 385-1-1, 1996.

Compliance with the above requirements will ensure that the health/safety issues and risks due to radiation exposure during remediation and transportation, to site workers as well as the surrounding population, will be successfully addressed.

- 9.2 – Cleanup criteria for the Ashland sites were developed using the CERCLA process. The cleanup criteria must satisfy the CERCLA acceptable risk range as well as the ARARs. The Th-230 guideline development considered intended and reasonable future land use, the likely maximum exposed individuals, and the criteria included in the ARARs. The key ARARs included EPA 40 CFR 192 and NRC 10 CFR 20. The result of the guideline development effort was a cleanup criteria of 40 pCi/g Th-230.

The guideline derivation demonstrated that the conditions at the site, after removing soils exceeding the site-specific derived guideline of 40 pCi/g Th-230, will be protective of human health and the environment, meet the ARARs, and meet the acceptable CERCLA risk range established by the USEPA in the NCP. The analysis also demonstrated that at this cleanup criteria level, the estimated doses to receptors for the intended land uses (commercial/industrial) meet the objectives defined in the to be considered (TBC) guideline of 10 mrem/yr (NYSDEC TAGM 4003) for intended land use.

Once the site has been restored, it can be released for development into an industrial/commercial-use facility with 5-year reviews as required by CERCLA.

- 9.3 – These concerns will be addressed when action is proposed at those specific sites. The public will continue to be informed of schedules and actions at the other Tonawanda FUSRAP sites through the continued implementation of the Community Relations Plan.

- 9.4 – Cleanup criteria for the Ashland sites were developed using the CERCLA process. The cleanup criteria must satisfy the CERCLA acceptable risk range as well as the ARARs. The Th-230 guideline development considered intended and reasonable future land use, the likely maximum exposed individuals, and the criteria included in the ARARs. The key ARARs included EPA 40 CFR 192 and NRC 10 CFR 20. The result of the guideline development effort was a cleanup criteria of 40 pCi/g Th-230.

The guideline derivation demonstrated that the conditions at the site, after removing soils exceeding the site-specific derived guideline of 40 pCi/g Th-230, will be protective of human health and the environment, meet the ARARs, and meet the acceptable CERCLA risk range established by the USEPA in the NCP. The analysis also demonstrated that at this cleanup criteria level, the estimated doses to receptors for the intended land uses (commercial/industrial)

meet the objectives defined in the to be considered (TBC) guideline of 10 mrem/yr (NYSDEC TAGM 4003) for intended land use.

- 9.5 – The conduct of this project does not specifically prevent the concurrent development of adjacent uncontaminated areas, in accordance with the town zoning laws and other applicable or relevant and appropriate laws and regulations. Impact to wetlands will be minimized to the extent practicable during remediation activities. Upon completion of the remediation the Ashland sites, the site will be suitable for use as a commercial or light industrial property in accordance with the Town of Tonawanda Waterfront Region Master Plan.

FRANCIS C. AMENDOLA
ATTORNEY AT LAW
305 Elmwood Avenue
Buffalo, New York 14222
(716) 884-6733

RECEIVED
JAN 14 1998
USACE Buffalo District
Tonawanda FUSRAP Office

January 12, 1998

U.S. Army Corps of Engineers
Public Information Center
70 Pearce Avenue
Tonawanda, NY 14150

Re: Comment Period, Proposed Plan for the Ashland 1 and Ashland 2 Sites

Dear Sir/Madam:

I am writing on behalf of F.A.C.T.S. (For a Clean Tonawanda Site) to request an indefinite extension of the comment period relative to the Proposed Plan for the Ashland 1 and Ashland 2 Sites or, in the alternative, a minimum thirty (30) day extension as required by the applicable regulation. 40 C.F.R. Part 300.430(f) states that "upon timely request, the lead agency will extend the comment period by a minimum of 30 additional days." The language of the regulation is mandatory, and the requirement that an extension be granted upon timely request is not made contingent upon the length of the initial period. Given that the request previously submitted by F.A.C.T.S. was timely, the Corps' grant of an extension of only 11 additional days is in clear violation of the regulations. I trust the Corps will see fit to correct this situation.

Thank you for your kind attention.

Very truly yours,



FRANCIS C. AMENDOLA

5.10 Response to Amendola Comment

10. – The PP was issued on November 10, 1997 and USACE granted a 30-day extension to the comment period. An additional 11 days was added to this extension after several members of the public requested additional time for preparing their comments. With the extension, the comment period totaled 71 days. Other extensions were considered, however, USACE determined that additional extensions were not appropriate.

**LEAGUE
OF
WOMEN
VOTERS**



1272 Delaware Ave., Buffalo, NY 14209-2401

Tel: 716-884-3550

January 12, 1998

Lt. Col. Michael J. Conrad, Jr.
Site Manager, FUSRAP Tonawanda Site
Buffalo District, U.S. Army Corps of Engineers
1776 Niagara Street
Buffalo, NY 14207-3199

Dear Colonel Conrad:

It has come to our attention that a cleanup plan has been proposed for the FUSRAP Tonawanda waste site and that the comment period would come to an end shortly.

11.1 As advocates for the rights of citizens to a healthy environment and to participation in the decision-making process we believe that the time between the plan's release in November, the public hearing in December and the closing of comments in January was unrealistic. We understand that questions of interested parties remain unanswered.

11.2 When I attempted to reach you by telephone I was told that the comment period would probably be extended by ten to fifteen days. I objected to Sara Snyder of your office that that was not enough time. She promised to relay the message to you. It is our understanding that Title 40 Code of Federal Regulations provides for a minimum of thirty days extension upon public request. Certainly more time than ten to fifteen days is in order.

11.3 We urge you to extend the comment period sixty to ninety days to allow for all pertinent questions to be answered, and for adequate time thereafter for review and comment by concerned individuals and groups.

Sincerely,

Leonore S. Lambert,
Vice President, Administration
League of Women Voters of the Greater Buffalo Area



5.11 Responses to LWV/Lambert Comments

11.1, 11.2, & 11.3 – The PP was issued on November 10, 1997 and USACE granted a 30-day extension to the comment period. An additional 11 days was added to this extension after several members of the public requested additional time for preparing their comments. With the extension, the comment period totaled 71 days. Other extensions were considered, however, USACE determined that additional extensions were not appropriate.



INTERNATIONAL
URANIUM (USA)
CORPORATION

Independence Plaza, Suite 950 • 1050 Seventeenth Street • Denver, CO 80265 • 303 628 7798 (main) • 303 389 4125 (fax)

January 16, 1998

Mr. Michael J. Conrad, Jr.
Lieutenant Colonel
Commanding
U.S. Army Engineer District
Buffalo District
Formerly Utilized Sites Remedial Action Program
70 Pearce Avenue
Buffalo, NY 14150

RECEIVED

JAN 20 1998

USACE Buffalo District
Tonawanda FUSRAP Office

Re: Comments on Proposed Plan for the Ashland 1 and Ashland 2 Sites

Dear Lt. Conrad:

As one of the only licensed, operating uranium and vanadium processing facilities in the United States, we would like to take this opportunity to comment on the "Proposed Plan for the Ashland 1 and Ashland 2 Sites", issued November 1997 by your office.

Summary:

12.1 If any of the off-site disposal alternatives are chosen (Alternatives 2, 3, 4 and 2A) as the final remedy, such remedies should explicitly encourage the use of waste recycling techniques. It appears that there are attractive "ore grades" of uranium and vanadium in portions of the Ashland sites which can be economically recovered. Employing recovery/recycling techniques will decrease the cost of off-site disposal and increase the volume of materials, which can be removed from contaminated areas. In contrast, the proposed plan issued by the U.S. Army Corps of Engineers appears to favor strict and simple (landfill) disposal for Alternatives 2, 2A, 3 and 4.

Discussion:

Utilizing recycling and mineral recovery technologies to reduce radioactive material disposal costs is a relatively new approach not widely understood. International Uranium (USA) Corporation (IUC) began pioneering the use of the U.S. Nuclear Regulatory Commission's "alternative feed material" policies in 1996. Under this approach, IUC has undertaken material recycling programs for a variety of concerns, including Allied Signal, Cabot Corporation and the U.S. Department of Energy. Earlier in 1997, IUC saved over \$3 million in taxpayer costs by reprocessing the so-

called "Cotter Concentrate" for the Department of Energy's Nevada Test Site; residual material was placed in IUC's 11e(2) impoundment. IUC's modern mineral processing complex in Southeastern Utah allows us to recycle materials for uranium, vanadium and rare earth ores. New capital equipment investments made in 1997 have made our facility the most efficient in the country.

Based upon our preliminary analysis of the materials stored at the Ashland 1 and 2 sites, it appears that economically recoverable levels of uranium and vanadium exist there. The levels of uranium concentrations are so high in some portions of the Ashland site that some disposal sites may be prohibited from taking such material. Specifically, based on information provided in the February 1993 "Remedial Investigation Report for the Tonawanda Site" and the 1978 report "Radiological Survey of Ashland Oil Company", it appears that the Southeast and Northern portions of the Ashland 1 site contain economically recoverable levels of uranium and vanadium. Uranium sludge rests here with concentrations of 0.52% up to 1.23% uranium, along with significant values of vanadium.

Since DOE's characterization data is limited, it is difficult to quantify the value of this material. It is clear, however, that significant portions of this material can be recycled so as to reduce the Corps' total remediation costs. Decreasing disposal costs will allow the Corps to increase the volume of materials shipped offsite, assuming budgets remain constant. Allowing for recycling also will decrease disposal costs, since tipping fees are often based on curie content and material volume.

Despite this material recycling opportunity, it appears that the off-site disposal options addressed in the Proposed Plan favor the use of conventional disposal facilities and inadvertently tend to preclude innovative recycling. Because of this situation, we make the following suggestions:

- 12.1 (cont.)
- 12.2
- 12.3
- 12.4
1. The Corps should explicitly allow and encourage recovery and recycling of valuable products from Ashland 1 and 2.
 2. The Corps should undertake more rigorous material characterization studies at Ashland 1, so as to evaluate mineral recovery economics and verify conformance with disposal site requirements.
 3. The Corps should guard against disposal contractors' proclivity to "average" material radionuclide content, thereby avoiding recycling opportunities. For example, the Corps could require material mobilization contractors to conduct periodic material sampling programs in order to monitor for relatively high uranium, vanadium and rare earth values. (Some type of material testing will undoubtedly be required by the disposal contractors, in any case.)
 4. Implementation costs provided in Table 1 of the Proposed Plan do not reflect cost savings which can be realized from recycling approaches.

Mr. Michael J. Conrad, Jr.
January 16, 1998
Page 3

We appreciate the opportunity to provide these comments on the Proposed Plan for the Ashland 1 and Ashland 2 Sites. We would welcome the opportunity to discuss these matters with you, as it appears that other FUSRAP sites might present additional recycling opportunities.

Very truly yours,



Harold R. Roberts
Executive Vice President

HRR/pl

cc: T. Burns
G. Butterworth
D. Conboy
P. Griffin
R. Pilon

5.12 Responses to International Uranium Corporation (IUC) Comment

12.1, 12.2, 12.3, and 12.4 ~ In 1994 soil samples were obtained from several Tonawanda sites, including the Ashland sites, and tests conducted to assess the feasibility of cost effectively reducing the volume of soils requiring disposal as radioactive waste through treatment. Soil washing was the primary process evaluated. However, much of the contamination was found locked within a slag type matrix, making it difficult to chemically extract. The chemical extraction treatment process was not cost effective as it could not produce a clean soil fraction to offset the cost of purchasing and recycling the extractant solution.

Typically, the recovery of metals from soils is done through a chemical extraction process similar to the type evaluated in these treatment tests. As much of the contamination in the soils is bound within a slag type matrix, and the chemical extraction process needed for metals recovery is costly, it is not expected that recovery of metals from the soils would produce a cost savings. Thus, the selected alternative achieves the best possible result in terms of satisfying the statutory preference for remedies that employ treatment that reduces toxicity, mobility or volume as a principal element.

GIVENS, FUNKE & WORK

ATTORNEYS AT LAW
TOP FLOOR - OLD CITY HALL
424 SHERMAN AVE. P.O. BOX 949
COEUR D'ALENE, IDAHO 83816-0949
(208) 667-5486
FAX (208) 667-4695

RECEIVED

January 16, 1998

JAN 20 1998

USACE Buffalo District
Tonawanda FUSRAP Office

Sarah Snyder
FUSRAP Information Center
70 Pearce Avenue
Tonawanda, NY 14150

Re: Spokane Tribe of Indians' Comments on the Proposed FUSRAP Remedial
Action, Ashland 1 Site and Ashland 2 Site, Tonawanda, New York

Dear Ms. Snyder:

I am Special Legal Counsel to the Spokane Tribe of Indians on various natural resource matters. One of the matters on which I work for the Tribe concerns an inactive uranium millsite located just off the Spokane Indian Reservation, but immediately adjacent to it and to an important Reservation waterway known as Chamokane Creek. Operated for decades by Dawn Mining Company, the millsite is known to contaminate both surface and ground waters, including waters to which the Tribe holds federally protected and adjudicated rights. *See United States v. Anderson*, 736 F.2d 1358 (9th Cir. 1984). Under its off-reservation authority, the State of Washington in February 1995 licensed Dawn to convert a vast open impoundment at the site into a disposal cell for Atomic Energy Act 11.e(2) byproduct material. These comments are submitted on behalf of the Spokane Tribe regarding the USACE's proposed remedial action for the Ashland 1 and Ashland 2 properties at the Tonawanda, N.Y. FUSRAP site. They are specific to impacts to the Spokane Indian Reservation anticipated to be caused by alternatives which require offsite disposal, including Alternatives 2 and 4, and the preferred alternative 2A. Further, these comments also extend to the supporting documents, as allowed in the November, 1997 Proposed Plan for the Ashland 1 and Ashland 2 sites.

INTRODUCTION

An Executive Memorandum issued by President Clinton on April 29, 1994 implements four key guiding principles for federal actions affecting Indian tribes and tribal trust resources:

- 1) federal departments and agencies are to "operate[] within a government-to-government relationship with federally recognized tribal governments,"



2) federal departments and agencies "shall consult . . . prior to taking actions that affect federally recognized tribal governments,"

3) federal departments and agencies "shall assess the impact of Federal Government plans, projects, programs, and activities on tribal trust resources and assure that tribal government rights and concerns are considered during the development of such plans, projects, programs, and activities," and

4) federal departments and agencies "shall take appropriate steps to remove any procedural impediments to working directly and effectively with tribal governments on activities that affect the trust property and/or governmental rights of the tribes."

These principles have not been realized.

13.1
13.2
Within the brief period available to the Tribe for reviewing the USACE's revised proposed plan and supporting documents, it has been ascertained that some of the materials to be excavated from the Ashland properties for off-site disposal may be Atomic Energy Act 11.e(2) byproduct material. If so, the revised proposed plan, the proposed plan, the feasibility study and supporting documents are deficient because they do not discuss impacts specific to disposal at facilities licensed to receive such materials, particularly where tribes and their resources might be negatively impacted. At present, there are only three facilities in the United States licensed to receive 11.e(2) material for disposal: one was licensed in New Mexico last year by the Nuclear Regulatory Commission, another is located in Utah, and the third is Dawn's facility next to the Spokane Indian Reservation. To the Tribe's knowledge, only the license at the Utah facility is presently not under legal challenge. Conceivably, however, administration of federal procurement and contracting laws may lead to an agreement by USACE to dispose 11.e(2) material at one of the other two facilities despite the questionable legal status of their licenses.

RISK TO TRIBAL TRUST RESOURCES AND HUMAN HEALTH

13.1 (cont.)
The proposed plan asserts that Alternative 2A "is protective of human health and welfare and the environment." The Tribe questions whether this conclusion can properly be reached when the potential impacts at the disposal end of the proposal are not even considered. The Tribe is heavily dependent on the ground and surface waters of the Chamokane Creek Basin. See *United States v. Anderson*. In addition to supporting Reservation fish and wildlife, uses of this basin's waters include domestic, ranching, farming, and a Tribal fish hatchery. At present, the Dawn site is known to contaminate Chamokane Creek's surface water and an

upper aquifer at the site. Tribal technical staff have determined it likely that the site also contaminates a deep aquifer from which drinking water is drawn. Further, the High Density Polyethylene liner in Dawn's disposal cell is only 30 mil, and is over 16 years old. The manufacturer's warranty for the liner expired more than one year ago. Similar concerns have been raised by Department of Energy technical staff who should be consulted by USACE before determining to send Tonawanda waste to eastern Washington. Beyond this, it is imperative that the Tribe be consulted with concerning any possible federal action which might threaten its Reservation, and that such consultation be conducted sufficiently early in the process that it will have a meaningful effect on the outcome.

In applying the evaluation criteria, the revised proposal plan, in typical fashion, focuses on the subject Tonawanda sites. Alternative 2A is rated high in such areas as "Overall Protection of Human Health and the Environment" and "Long-term Effectiveness and Permanence" based on the justification that the material will be "permanently isolated in a disposal facility" or "placed in an engineered disposal cell." As discussed above, however, these conclusions when applied to Dawn's facility are highly suspect from a technical standpoint. Moreover, from a federal Indian policy standpoint, they are wholly unsupported since no effort has been made by USACE to "assess the impact of Federal Government plans, projects, programs, and activities on tribal trust resources and assure that tribal government rights and concerns are considered during the development of such plans, projects, programs and activities." See Presidential Memorandum dated April 29, 1994. The reason the principles in the Presidential Memorandum exist is the federal trust responsibility to tribes and their resources, developed through more than 150 years of jurisprudence. States have no such responsibility, and indeed throughout history have routinely taken strongly adverse positions to tribes as sovereigns. In fact, this responsibility can be neither delegated to states nor abdicated by the federal government. *Assiniboine and Sioux Tribes v. Bd. of Oil and Gas*, 792 F.2d 782 (9th Cir. 1986). Thus, when disposal of federal waste is considered for a state-licensed site like Dawn's it is incumbent upon the responsible federal agency as trustee to ensure no injury to affected tribes and their resources. While offsite disposal impacts are often not considered in environmental reviews for reclamation, they must be where federal trust duties have not been addressed in the process of licensing the disposal facility. And this must be accomplished before the federal action has proceeded down a path where federal procurement and contracting laws render it irreversible.

If Dawn's facility is a potential disposal site, the Spokane Tribe's "rights and concerns" must yet be considered. In the context of trust resources, those "rights and concerns" include the following. What are the impacts the DMC site and the additional FUSRAP waste will have on Reservation resources? Will the quality or quantity of these

waters be impacted in any way by the proposed alternative? What impacts will result to Reservation fish and wildlife? What are the likely human health impacts if the FUSRAP waste in Dawn's impoundment contaminates the deep aquifer? What will be required as mitigation should this occur? Shouldn't the condition and integrity of the specific disposal cell at the facility be taken into account in order to complete this analysis? Have there been irreversible and irretrievable commitments of Tribal resources? How would a Tribal natural resource damage action under CERCLA for harm to Reservation resources affect the cost analysis of Alternative 2A? Does the federal government's trust responsibility over Tribal trust resources permit the disposal of FUSRAP materials at Dawn's site? These questions must be answered and a more meaningful opportunity for Tribal consultation presented before USACE commits to a course which may lead to further injury of Tribal trust resources.

TRAFFIC SAFETY RISKS TO TRIBE

13.3 The route selected by Dawn to transport its waste includes a narrow, winding and hilly highway which serves as the primary route for Tribal members and employees travelling to and from the Spokane Indian Reservation. The Tribe presently is contesting selection of this route, and will be submitting to the State of Washington the enclosed document entitled "Traffic Safety Study, State Route 231, Reardan to Ford, Dawn Mining Mill Site Closure Proposal," which are formal comments prepared by a Tribal traffic safety consultant on a State conducted study, and which are to be considered as additional Tribal comments regarding the Ashland remediation.

In general, the issues of trust responsibility raised in the above section concerning threats to human health and natural resources apply equally to the traffic threats Dawn's plan poses to Tribal membership. Although traffic impacts are considered in the Feasibility Study and elsewhere, the guiding principles of the 1994 Executive Memorandum are not satisfied. The Tribe must be consulted with on a government-to-government basis and impacts to the Tribe must be assessed prior to implementation of the plan.

In assessing these impacts, the following must be considered. According to Washington data, nearly one-half of the accidents studied along Dawn's route result in death or injury. Dawn's proposal will increase large truck traffic on State Route 231 by 400% to 600%. Large trucks, during the period in which the State's studies provide such statistics, represented nearly one-sixth of the accidents in this corridor. A particularly winding stretch of this route is in a canyon adjacent to a stream which flows onto the Spokane reservation, and represents an area in which nearly one-fourth of the accidents studied along Dawn's preferred route occurred. Spills of radioactive waste from accidents in either this canyon or

at a dangerous bridge which crosses the Spokane River will result in contamination of critical Tribal waters and other resources. Beyond an assessment of these issues, the Tribe, consistent with the Presidential Memorandum and the United States' trust responsibility, is entitled to consultation.

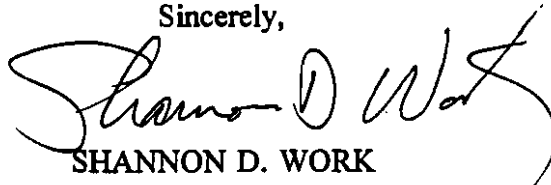
THE ASHLAND PLAN RAISES ISSUES OF ENVIRONMENTAL JUSTICE

13.4 { The need to examine the disposal end of the Ashland plan is important, not just to satisfy the guiding principles of the 1994 Presidential Memorandum, but also to satisfy the mandate of Executive Order 12898, dated February 11, 1994. That executive order requires agencies of the executive department to act consistent with the principle of environmental justice. In other words, these agencies must consider and address the disproportionate impact their actions have on minority and low income populations. Clearly, all impacts to the Spokane Tribe and its Reservation discussed above fall within this mandate. Federal agencies cannot escape applying this analysis to the disposal end of remediation actions where, as here, the licensing entity is not required to conduct a similar analysis. In this regard, environmental justice principles associated with the Ashland plan — as it relates to Dawn's facility — must be satisfied in addition to meeting the government's trust obligations to the Spokane.

CONCLUSION

The Spokane Tribe appreciates the opportunity to submit these comments and the attached comments to the USACE. In particular, the extension granted is appreciated. Please advise at the earliest opportunity whether the consultation sought in these comments can be arranged. Also, please keep me advised as to future developments on this and other FUSRAP projects which might affect my client's interests.

Sincerely,


SHANNON D. WORK
Attorney at Law

SDW:jaf

enclosures



Traffic Safety Study

State Route 231

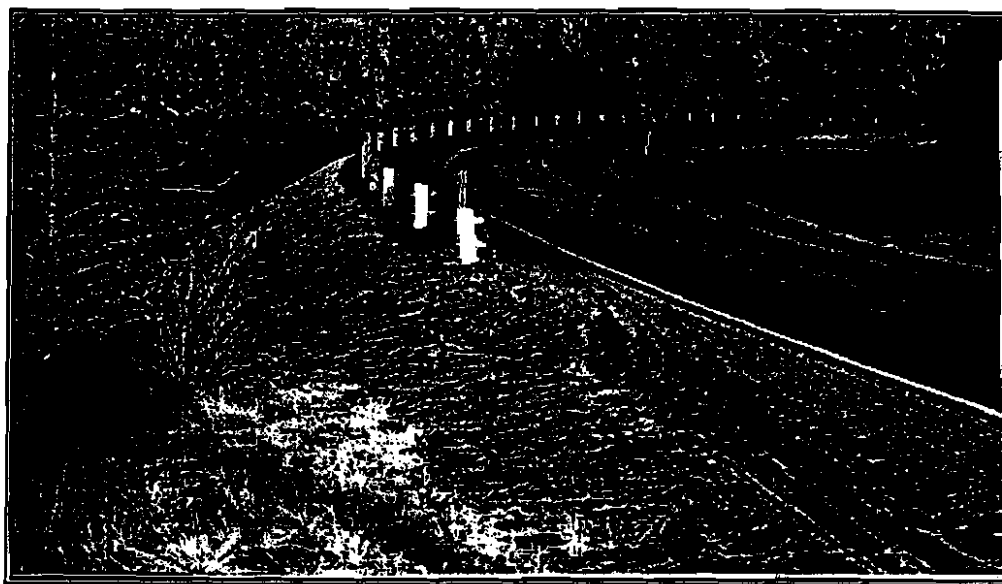
Reardan to Ford

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JAN 20 1998

USACE Buffalo District
Tonawanda FUSRAP Office

Dawn Mining Mill Site Closure Proposal



January 1998

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Purpose of Report

In May of 1997, the Eastern Region of the Washington State Department of Transportation (WSDOT) completed a safety study entitled "SR 231 - Safety Study for the Closure of the Dawn Mining Mill Site". This study analyzed a number of roadway safety related items on SR 231 between the town of Reardan, WA and the access road to the Dawn Mining Company site just south of Ford, WA. Upon my review of this study I have found that although most roadway safety topics have been analyzed and discussed, the study basically serves as an analysis of existing conditions. The safety related impacts to SR 231 in view of the transport of hazardous and/or radioactive material with large, 5 axle vehicles on a consistent daily schedule for a long time period are not specifically discussed.

Enclosed in this report you will find my analysis and professional opinions specifically related to the transport of hazardous materials with large trucks on this section of SR 231. This analysis will be made with the existing roadway conditions as the foundation and the Dawn Mining Company (DMC) proposal built upon this foundation to give a better picture of the possible impacts to the safety of persons and the environment if DMC's proposal occurs.

Traffic Conditions - Existing and Proposed

This portion of the SR 231 corridor is the primary commuter route for Spokane Indian Reservation residents and Tribal employees traveling to and from the Spokane Indian Reservation. The SR 231 corridor is a rural two lane highway with reported 1996 traffic volumes of 1400 Average Daily Traffic (ADT) with 13.5% trucks just north of Reardan, 900 ADT with 11.6% trucks just south of the junction with SR 291, and 1100 ADT with 14.9% trucks just south of Ford. WSDOT reports that at the time of these counts (July 1996), approximately 1.4% of the total ADT consisted of large trucks, with large trucks defined as those having 5 axles or a length of at least 55 feet. Annual traffic growth rates of 4% to 5% are reported.

The current DMC proposal to import contaminated waste to its facility specifies 38 round trips per day, or an addition of 76 vehicles per day to the existing ADT. Table 1 outlines the impact to existing traffic conditions for total vehicle traffic, general truck traffic, and large truck traffic (5 axle or >55' in length) at the three locations on SR 231 where counts were taken in July of 1996. This table provides a framework for evaluating the increase in traffic safety concerns due to the DMC proposal. A traffic growth rate of 5% is used and 1999 is assumed to be the year contaminated material begins being imported to the DMC site.

Again, the assumptions made for Table 1 include an annual traffic growth rate of 5%, that the percentage of trucks in the traffic stream prior to the hauling of contaminated material to the DMC site remains constant, that the DMC proposal is implemented in 1999, and that large

trucks (5 axle or >55' length) are used to transport the contaminated material. All these assumptions are reasonable based on available information.

As seen in Table 1, overall traffic growth from 1996 to 1999 is a significant but modest 16%. The largest changes to the traffic stream due to the implementation of the DMC proposal involve trucks. The percentage increase in overall truck traffic ranges from 55% just north of Reardan to 86% just south of the SR 291 junction.

Table 1 - 1996 vs 1999 Average Daily Traffic, Average Daily Trucks, and Average Daily Large Trucks (5 axle or >55' length)

	SR 231 north of Reardan	SR 231 south of SR 291 Jct	SR 231 south of DMC access road
1996 ADT	1419	909	1130
1999 ADT	1643	1052	1308
% increase	16%	16%	16%
1996 Trucks	192	105	168
1999 Trucks	298	198	271
% increase	55%	86%	61%
1996 Large Trucks	20	13	15
1999 Large Trucks	99	91	93
% increase	395%	600%	520%

The percentage increase in large trucks is most significant and alarming. As seen in Table 1, the percentage increase in large trucks ranges from 395% just north of Reardan to 600% just south of the junction with SR 291.

The increase in regular and large truck traffic as outlined in Table 1 will serve as the basis for my analysis of roadway safety concerns based on the DMC proposal. It should be noted that the Dawn Mining Company estimates that approximately 25 million cubic feet of material will be hauled at 500 cubic feet per load. They state that this calls for 38 one way trips per day (76 two way trips), 260 days per year for five years. During recent safety mitigation discussions, Dawn Mining Company has stated a willingness to suspend hauling during times school buses pick up and drop off school children along SR 231. They further stated a willingness to suspend hauling during periods of poor weather and road conditions. If these mitigative

measures are invoked, it seems likely that the estimated number of trips per day would have to increase in order to end operations in five years, or if daily trips remain constant, hauling could extend into the sixth or seventh year. Either scenario would increase negative impacts.

Existing Lane and Overall Pavement Widths

The WSDOT safety study states that SR 231 “generally has adequate alignment with one, 11 foot lane in each direction and shoulders ranging from 2 to 4 foot in width”. The surfacing requirements of the shoulder are not mentioned.

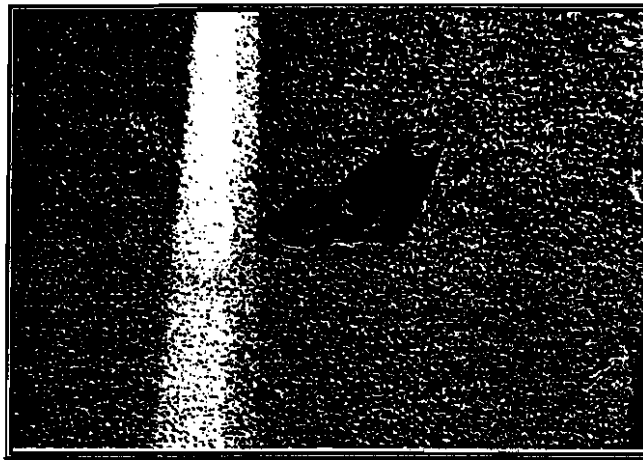


Figure 1 - Typical shoulder within SR 231 corridor

Any improvements made to the existing roadway would require an upgrade of existing lane and shoulder widths to a minimum of 12 foot and 3 foot, respectively (this assumes > 1000 ADT and > 10% trucks, both reasonable assumptions). The existing lane and shoulder widths do not meet those required of today's roadway project design standards. In other words, the increased lane and shoulder widths would be required of any roadway safety or capacity improvement projects as outlined in the Modified Design Standard requirements.

I am concerned about these lane and shoulder width issues with respect to the huge increase in large trucks proposed by the DMC. What concerns me more is that I disagree with the existing lane and shoulder width measurements reported in the WSDOT study. Table 2 below shows lane and shoulder width measurements taken at a number of locations within the corridor. It should be noted that in my opinion, the shoulders in this corridor need to be paved in order to be considered a shoulder due to the generally soft, sandy material found beyond the

edge of the pavement. Lane widths reported below are measured from the center of the centerline stripe to the center of the fogline, and shoulder widths are measured from the center of the fogline to the edge of the pavement. What is often overlooked is that effective lane widths are taken from the inside of the centerline stripe to the inside of the fogline, thus these effective lane widths are approximately 0.25 feet to 0.75 feet less than those shown in Table 2.

Table 2 - Existing lane and shoulder widths at selected locations

Location	Lane Width (ft)	Shoulder Width (ft)	Overall Pvmnt Width (ft)
MP 34.4	10.75	1.25	24
MP 35.5	10.25	1.75	24
MP 36.7	10.5	2.5	26
MP 38.8	10.25	2.75	26
MP 40.7	10.25	1.75	24
MP 43.8	10.25	1.75	24
MP 44.7 (Spokane River Br.)	10.5	1.5	24
MP 46.4	10.25	1.25	23

As seen in Table 2, typical lane widths for the corridor are just over 10 feet, and typical shoulder widths are under 2 feet. Overall pavement width is typically 24 feet. These widths differ significantly from those reported by WSDOT, and differ even more from those required by the Modified Design Standard.

These travel lane and shoulder widths are of concern considering the proposed increase in large trucks by the DMC. Large trucks have difficulty remaining in their travel lane on straight sections of highway at these lane widths. In horizontal curves, particularly in those of 900 foot radius or less, it is unreasonable to expect that large trucks will always remain within their lane with these typical lane widths. The proposed increase in large trucks will negatively impact motorists who meet such trucks at highway speeds. In addition, the likelihood that two trucks will meet on a horizontal curve will significantly increase with the DMC proposal. This concern will be discussed in more detail in the next section.

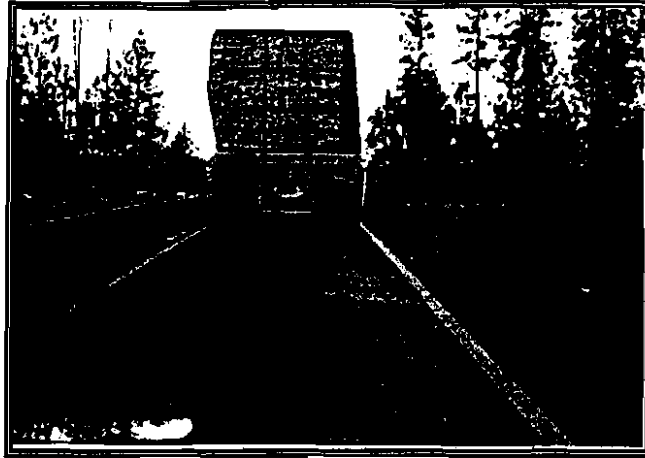


Figure 2 - Typical lane width

Horizontal Curves and Off-tracking

There are a number of horizontal curves of note within the corridor. Particularly noteworthy are horizontal curves of less than 900 foot radius. Horizontal curves with short radii present tracking concerns for large trucks on roadways with narrow lane and overall pavement widths such as SR 231. Due to the greater width and length of large vehicles, the wheel path can be wider than the lane of travel within the horizontal curve due to the rear wheels of the large vehicle tracking inside the front wheels. This is referred to as off-tracking.

The off-tracking phenomenon in curves with narrow roadway width conditions can cause the large vehicle to cross the centerline when negotiating the horizontal curve. This concern is often compounded by the fact that the forward sight line between the large vehicle and a vehicle approaching in the opposite direction is often limited by the horizontal curve itself.

I believe that off-tracking is of significant concern in this corridor, particularly if the current DMC proposal is implemented. Six main factors constitute the majority of my concern:

- 1) Overall lane and pavement widths are too narrow at certain horizontal curves within this corridor which will often result in large trucks off-tracking within these curves.
- 2) Sight distance is limited at certain horizontal curves, giving motorists less time to react to an approaching large vehicle that has crossed the centerline due to 1 above.

- 3) If the DMC proposal is implemented, there will be a 395% to 600% increase in large vehicles on SR 231, resulting in many more instances where large vehicles could cross the centerline at certain horizontal curves, particularly those listed in Table 3.
- 4) If the DMC proposal is implemented, there will be many more occurrences of two large vehicles approaching from opposite directions meeting within the smaller radius horizontal curve. Also of significant note is the increase in chance of a large vehicle and a school bus meeting per above, because it is unclear whether the DMC would cease operations only during normal morning and afternoon bus transport times or during all times of school bus operations (extracurricular).
- 5) There will be a significant increase in the chance that two large vehicles will meet while a pedestrian is standing or walking along the roadway or a cyclist is riding along the roadway if the DMC proposal is implemented. Should this happen in a roadway section with a steep embankment or guardrail, there could be no place for a pedestrian or cyclist to shy away from the roadway edge.
- 6) The huge increase in large vehicles will cause a proportionate increase in off-tracking in the small radius horizontal curves. This in turn will likely break down the shoulder areas adding to maintenance and safety concerns. The existing shoulders are typically narrow and soft beyond the pavement edge. If the shoulders lose width due to off-tracking, the concerns in the small radius curves will increase as the overall pavement width decreases.



Figure 3 - Off-tracking in horizontal curve

In my opinion, the chance for a head on or run off the road collision at the less than 900 foot radius curves will significantly increase if the DMC proposal is implemented unless mitigative action is taken. The WSDOT safety report agrees that pavement widening is needed on certain curves due to large vehicle off-tracking.

The only fatality reported in this corridor by the WSDOT safety study appears to have occurred at the crest vertical/horizontal curve combination at MP 38.8. This was reported as a head on accident (two vehicles colliding head on from opposite directions). Because information on this accident is limited in the WSDOT study, further investigation into the specifics of this accident are needed, but it seems likely that the accident occurred in the horizontal curve. The probability of occurrence of this type of collision will increase if the DMC proposal is implemented and the <900 foot horizontal curves are not improved.

From my field review of the corridor, I am listing below in Table 3 a number of curves that I suspect to be less than 900 foot in radius. Horizontal and vertical stopping sight distance (SSD) measurements are also included at certain curves. It should be noted that Geometric Design of Highways and Streets by the American Association of State Highway and Transportation Officials (AASHTO) recommends 450 feet to 550 feet of stopping sight distance (SSD) for 55 mile per hour design speeds on level ground, and an additional 65 feet for 4 % to 5 % downgrades.

Table 3 - Horizontal curves suspected to have less than 900 foot radius

Location of Suspected <900' Radius Horizontal Curve	Lane Width (ft)	Overall Pavement Width (ft)	Horizontal Stopping Sight Dist. (ft)	Vertical Stopping Sight Dist. (ft)
MP 34.5 (rock cut)	10.5	24	--	--
* MP 35.5	10.25	24	--	--
* MP 36.7	10.5	26	430	--
MP 38.8	10.5	24	395	285
MP 43.8	--	24	--	--
MP 44.5	--	24	--	--
MP 44.8	--	24	--	--

* There are a series of curves from MP 35.5 to MP 37.0 that need to be further investigated.

The minimum lane width and minimum total roadway width for a 900 foot radius horizontal curve per the Modified Design Level is 11 feet and 26 feet, respectively. However, wider minimum lane widths and total pavement widths are required as the horizontal curve radius becomes less than 900 feet. For instance, a 500 foot radius horizontal curve requires a minimum 12 foot lane width and 28 foot total pavement width.

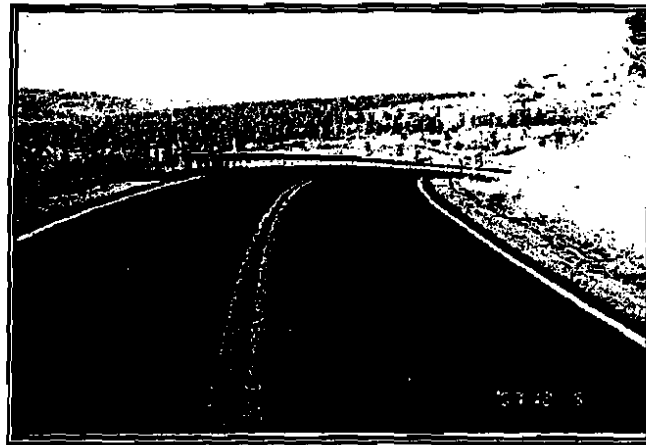


Figure 4 - Northbound at MP 38.8 - crest vertical & small radius horizontal curve combination

Before the current DMC proposal were to be implemented, I highly recommend that the exact radius of each suspect curve be determined and the curve widened to at least the minimum widths outlined in the Modified Design Level. Action should be taken to mitigate the large increase in likelihood of head on and run off the road collisions in these curve areas. Further shoulder widening should be considered beyond these minimums in areas where pedestrians are likely to be walking and no refuge area exists for their safety.

Existing Roadway Lighting

There is currently no roadway lighting along this corridor. Roadway lighting at selected locations, including the intersections of SR 231 at Little Falls Rd, SR 291, Corkscrew Canyon Rd, and the DMC access Rd, could help improve motorist safety during dark conditions. The WSDOT safety study specifically mentions that increasing driver awareness may help to reduce accidents at the Little Falls Rd intersection. Roadway lighting at this intersection would help better identify this intersection to motorists at night, dawn, and dusk.

Roadway lighting should certainly be included in any intersection improvement projects, including the addition of turn lanes on SR 231 at the DMC access Rd. Turn lanes require a driver decision approaching an intersection, and during darkness, dawn, or dusk, roadway lighting can help better define the lane choice decision faced by the motorist.

It should be noted that during late fall and early winter, dawn, dusk, and darkness extend into typical truck hauling hours and school bus pickup times. The use of roadway lighting at intersections and school bus pick up zones can help mitigate vehicle and pedestrian visibility concerns.

Little Falls Road Intersection

Of the twelve intersection collisions reported in the WSDOT safety study, eight occurred at the Little Falls Rd intersection. This constitutes 67% of all intersection collisions. Seven of these eight collisions were at right angle, indicating vehicles from Little Falls Rd turning into vehicles on SR 231.

Little Falls Rd via this intersection is a main access point to and from the state highway system and the Spokane Indian Reservation. The increase in large trucks proposed by the DMC will likely increase the severity of the angle accidents at this intersection due to the increased likelihood of any angle accident occurring involving a large truck on SR 231 (recall that general trucks will increase as much as 86% and large trucks will increase as much as 600% with the DMC proposal).

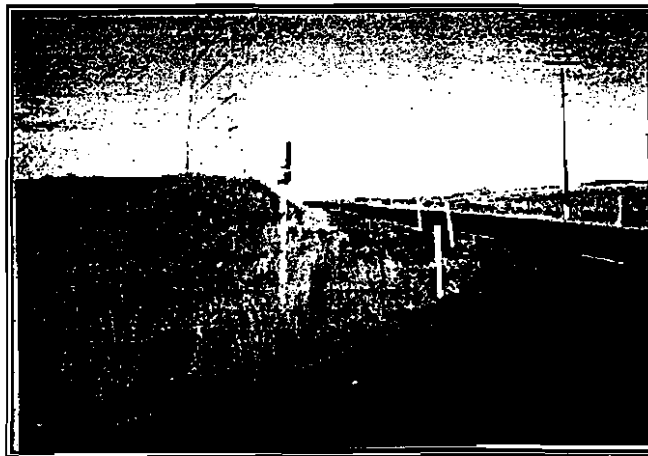


Figure 5 - West leg of Little Falls Rd & SR 231 intersection looking north

The WSDOT safety study states that increasing driver awareness at this intersection could lessen the possibility of accidents occurring.

To address collisions at this intersection, I recommend the following actions:

- 1) The installation of left turn channelization on SR 231 at the intersection. Although not readily warranted based on accident type, this improvement would do three things to decrease accident potential in my opinion. First, it would provide a refuge area on SR 231 for left turning vehicles from Little Falls Rd. Second, it would provide vehicles on SR 231 additional avoidance maneuver space. Third, it provides vehicles on SR 231 a visual queue that an intersection is approaching.
- 2) The installation of roadway lighting at the intersection. This improvement would also provide increased intersection awareness for vehicles on both SR 231 and on Little Falls Rd. Due to the lane choice decision, intersection lighting should be part of implementing recommendation 1 above.
- 3) Installation of highly reflective intersection warning signs on SR 231 in both directions approaching the intersection. Supplemental "Little Falls Rd" street names signs should be included as well. I recommend Diamond Grade VIP sheeting be used on these signs for enhanced nighttime performance.
- 4) The angle accidents should be studied to determine if any were caused due to vehicles on Little Falls Rd running the stop signs. If so, correctable measures in addition to roadway lighting could be implemented. Such measures include stop ahead signs, stop bars, and possibly a flashing beacon atop the stop signs.

School Bus Stops

School bus stops present a concern mainly due to the potential for conflict between the stopped school bus with its entering and/or existing school age passengers, and traffic on the highway. This concern is compounded by four main factors in highway situations. First, if there are a significant amount of trucks, especially large trucks, there can be increased likelihood for a collision because of the increased braking time that is required of such vehicles and their decreased maneuverability. Second, poor sight distance from highway traffic to the bus stop leaves less time for a motorist, especially the operator of a large vehicle, to react to the situation ahead. Third, the younger the child using the bus, the less capable the child is of dealing with the complexities of a highway school bus stop. Fourth, should buses pull over to allow vehicles to pass, large trucks will have difficulty accelerating to prevailing highway speeds, especially on grades, and a greater frequency of passing large trucks will occur.

As a pedestrian required to stand and walk aside highway traffic, school aged children are at significant risk as outlined above. In my opinion, elementary school children are at most risk. These young, inexperienced pedestrians have less experience in negotiating highway traffic. They are more apt to dart into traffic for no apparent reason. Until the age of approximately twelve, their depth perception and peripheral vision is not yet fully developed, leaving them less equipped to deal with bus stops beside high speed highways. Of course, as with most of the safety situations analyzed in view of a proposal like the DMC proposal, increasing truck traffic on the highway, particularly large truck traffic, increases the concern significantly due to vehicle size and width, increase in braking time, and decrease in maneuverability.

Per my field observations, school buses do regularly use SR 231 in this corridor. There are a number of "School Bus Stop Ahead" signs (S3-1) posted along the corridor. The presence of this type of signing alerts me to sight distance concerns between highway traffic and the bus stops. Per the Manual of Uniform Traffic Control Devices (MUTCD), which is the WSDOT standard for signing and striping roadways, this type of signing is intended for use where sight distance to the school bus stop is 500 feet or less, not just everywhere a school bus stop exists. For 55 mph, minimum stopping sight distance (SSD) requirements are 450 to 550 feet as reported by the American Association of State Highway and Transportation Officials (AASHTO). AASHTO also clearly states that these minimum SSD requirements are for passenger car operation and that "trucks as a whole, especially larger and heavier units, require longer stopping distance from a given speed than passenger vehicles do". Thus my concern over sight distance to these bus stop locations, particularly considering the DMC proposal.

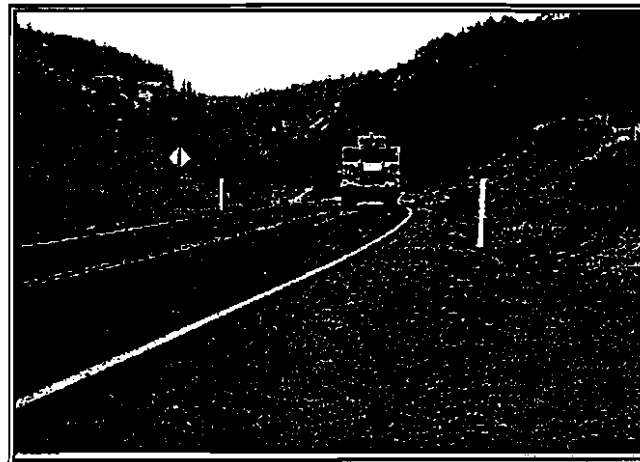


Figure 6 - School bus southbound at MP 38.8

If the current DMC proposal is implemented, I recommend three actions to address school bus stop concerns:

- 1) Construct bus pullouts at each bus stop location capable of removing the school bus from the highway completely.
- 2) Restrict the transport of hazardous materials during the school bus pickup and drop off times.
- 3) Review the location of bus stops and consider elimination or relocation of those located on upgrades or in areas of limited sight distance. Resulting pedestrian facility needs have to be considered for relocated stops.

A question may arise to the need for implementation of both recommendations one and two above. I feel that both should be implemented together as follows. First, it may be difficult to enforce the transport restriction during school bus pick up and drop off times. Thus, these restrictions may not always be observed. At the risk of making judgments without knowing the specifics on the contractor that will be transporting the hazardous materials, it has been my experience that in general, permit requirements for hauling are not always followed unless these requirements are strictly and regularly enforced. Second, school bus pick up and drop off times are not always restricted to the morning and afternoon. For instance, kindergarten classes are often half day and thus can have pick up and drop off around noon.

It has been reported to me that the current DMC proposal includes a provision for not transporting hazardous material during school bus pick up and drop off times. I highly recommend follow up on two issues prior to implementing this provision. First, have the local school districts provide a complete drop off and pick up schedule. Note the times outside the typical morning and afternoon routes. Will transport of hazardous materials be suspended during all times school buses use the highway? Last, design an enforcement plan including a schedule of penalties. Due to the lack of a weigh station on SR 231 within this corridor, enforcement could be difficult to implement. Suggestions for enforcement include regularly scheduled spot checks by the Washington State Patrol (WSP) or a commissioned private contractor.

Guardrail, Bridge Rail, and Clear Zone

Guardrail is a mitigative measure that can be employed to address hazards such as side slopes, fixed objects, and water in the event of a vehicle leaving the roadway. At bridges, bridge rail and bridge approach rail can be used to prevent errant vehicles from going over the side of the bridge structure, or striking the end of the structure. A clear zone is an unobstructed area beyond the edge of the roadway shoulder for the recovery of vehicles that leave the roadway.

My field investigation showed that there are many locations within this corridor where guardrail is warranted by current WSDOT standards, but no guardrail is provided. In addition, there are many existing locations of substandard guardrail including concrete post and post and cable types.



Figure 7 - High embankment without guardrail on the grade south of the Spokane River

The need and justification for mitigating the hazards presented by the existing side slope, water, and fixed object hazards along the SR 231 corridor in my opinion will increase if the current DMC proposal is implemented. More large trucks within the corridor will present increased opportunities for conflicts resulting in run off the road types of accidents as these trucks travel through and interact with other vehicles.

It is interesting to note that in the 52 non-intersection accidents reported in this corridor, it is likely that at least 43 involve vehicles leaving the roadway. If the two accidents that hit guardrail but did not break through are included, approximately 87 % of all non intersection accidents involve vehicles that either left the roadway or would have had guardrail not been present. It is my opinion that this percentage will likely remain the same if the DMC proposal is implemented, however the number of total accidents will likely increase. One can conclude from this accident data that vehicles leaving the road is a main concern and thus guardrail where warranted could be used to attempt to address this.

It should be noted that there are locations of water adjacent to the roadway in this corridor, as well as drainage and river crossings. It is reasonable to say that most of the streams and

drainage courses empty into the Spokane River, which forms the south border of most of the Spokane Indian Reservation. If a large truck transporting hazardous material were to leave the road and spill hazardous material into a stream or drainage course, the impact to the environment, particularly the Spokane River, could be significant. Again, barrier protection such as guardrail is one measure that can address this.

The WSDOT safety study states that further evaluation of approximately 15,000 feet of guardrail installation will be required if the ADT on SR 231 continues to grow. This statement likely reflects that for locations where guardrail is warranted for installation, it may not be recommended if the embankment is not high enough or steep enough for a given roadway ADT. This cost/benefit approach to installing guardrail does not appear to take into account the types of vehicles using the road, the likelihood that those vehicles may leave the roadway, roadway surface conditions (% time ice and snow on road), roadway grades, and perhaps most importantly in this case, the type of cargo being regularly transported on the road. Could the daily transport of hazardous material have an impact on the cost effectiveness of guardrail installation? I think so.

The WSDOT safety study also states that approximately 20,000 lineal feet of existing guardrail should be replaced to meet current standards. However, my field observations showed only about a quarter of this amount (4500 feet) of existing guardrail that needs upgrade. Thus accomplishing a total upgrade of existing guardrail to meet today's standards is not as overwhelming as may be initially reported by WSDOT.

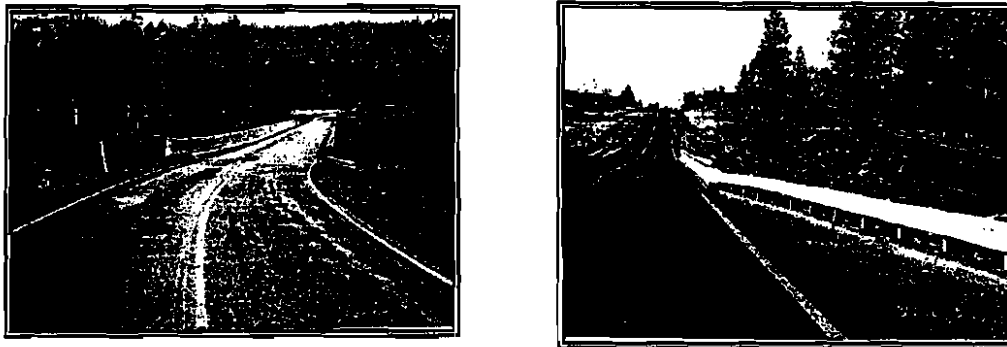


Figure 8 - Spokane River bridge rail that does not meet current WSDOT performance criteria (*left*), and an upgraded bridge approach (*right*)

At the Spokane River bridge, bridge rail and bridge end protection do not meet current standards. The installation of flared guardrail on the bridge approaches and thrie beam rail on the inside of the existing concrete bridge rail is recommended. These measures will help prevent vehicles, especially large trucks carrying hazardous material, from entering the Spokane River. Because of the possible terrible consequences of such an event to the motorist as well as the environment, the needed upgrades to the bridge rail and bridge end protection are highly recommended if the DMC proposal goes forward.

There are many locations adjacent to SR 231 where the clear zone area could be cleared of obstructions to improve safety. Areas with trees in the clear zone can be mitigated at a very reasonable cost. The rock cuts at MP 34.7 present a significant clear zone obstruction.

Drainage Crossings

The drainage crossing at MP 40.7 is of concern because at times the existing 24" diameter corrugated metal drain pipe is overwhelmed by storm water flow and siltation. This results in a flow of water over SR 231 and this presents a hazard to all vehicles on the highway. Large trucks transporting hazardous materials per the current DMC proposal may have difficulty negotiating the flooded roadway if the water over the roadway is not identified by the vehicle operator in time. Depending on the depth of water, this could cause the vehicle to lose control and overturn and/or leave the roadway. This presents the potential for hazardous material to enter the drainage stream and be carried to the Spokane River.

Due to the above mentioned concerns, I recommend that if the DMC proposal is implemented, the drainage crossing at MP 40.7 be improved so that water and mud flow across the highway is eliminated.

Grades

My field investigation revealed that there are a number of grades that would affect the speed of fully loaded large trucks on SR 231 within this corridor. However, three grades stand out as most significant due to their length. These three grades are shown in Table 4.

Of the three grades listed in Table 4, the last grade from MP 44.8 to MP 45.9 is of most concern to me if the current DMC proposal is implemented. The upgrade is in the northbound direction, which is the direction the large trucks transporting material to the DMC site will be fully loaded. In addition, this is the longest and steepest grade, with a maximum grade of approximately 7% at MP 45.7. Also, a major intersection with SR 291 is located within this grade.

Table 4 - Significant grades

Location of Grade	Length (miles)	Approx. Avg. Grade	Direction of Upgrade
MP 35.5 to MP 38.4	2.9	4.5 %	Southbound
MP 43.6 to MP 44.5	0.9	5.5 %	Southbound
MP 44.8 to MP 45.9	1.1	* 6 %	Northbound

* Maximum grade of 7% at MP 45.7

Assuming the large trucks in the current DMC proposal begin this grade at MP 44.8 at the speed limit of 55 miles per hour, truck speed will steadily decrease to approximately 17 miles per hour at MP 45.4, and then decrease further to approximately 14 mph at the 7% grade at MP 45.7. These speeds will continue to the crest of the grade at MP 45.9. Heavy truck acceleration tables show that it can take just under 2 miles for these vehicle to reach the speed limit after the upgrade has ended (assuming flat road after the grade). This means these vehicles may not reach the speed limit again until approximately MP 47.8. It should be noted that it may be very difficult for large vehicles to actually begin this grade at the speed limit of 55 miles per hour as assumed above due to the horizontal curve at the beginning of the grade. If large vehicles actually begin the grade at a speed that is lower than the 55 miles per hour speed limit, the large vehicle will reach its lowest speed even sooner, increasing the time that it could delay the progress of the normal traffic stream.

I have two main concerns with this grade if many additional large trucks use it on a daily basis. First, the faster a heavy truck can travel at the beginning of the upgrade, the longer it can maintain its speed. Thus, there will be an incentive for truck operators to speed on the downgrade and horizontal curve approaching the Spokane River bridge in order to hit the beginning of the upgrade at as great of speed as possible. The horizontal curve just to the south of the Spokane River bridge is suspected to have less than a 900 foot radius, thus off-tracking in this curve is already of concern. Speeding through the curve compounds this concern. This of course will increase the accident potential northbound on SR 231 through the village and curve area south of the bridge, and on the approach to the bridge itself. Second, the huge speed differential between regular traffic on the grade and the large trucks destined for the DMC site will tend to cause motorist frustration and will encourage passing. This concern is magnified by the presence of no passing zones on the grade and at the intersection with SR 291.



Figure 9 - Car closely following truck (*left*) then passing (*right*)
on southbound grade south of the Spokane River

As shown in Table 5, this speed differential is estimated to be at least 41 mph at some points of the grade. The time differential between a passenger car and a large truck to negotiate the three miles that the large truck will be traveling at reduced speeds is approximately 142 seconds.

Table 5 - Large truck vs. passenger car on northbound grade north of the Spokane River

Location	Approx. Car Speed (mph)	Approx. Large Truck Speed (mph)	Approx. Speed Differential (mph)	Elapsed Time for Car Since Start of Grade (sec)	Elapsed Time for Large Truck Since Start of Grade (sec)
MP 44.8 (Start of Grade)	55	55	0	0	0
MP 45.0	55	40	15	13	15
MP 45.4	55	17	38	39	65
MP 45.7	55	14	41	59	135
MP 45.9	55	17	38	72	181
MP 46.3	55	42	13	98	230
MP 46.9	55	50	5	137	277
MP 47.8	55	55	0	196	338

There are many locations within the three grades listed in Table 5 that warrant guardrail installation. The proposed increase in large vehicles on these grades increases the justification and cost effectiveness of guardrail installation, particularly considering the high, steep embankments, and the significant amount of time ice and snow is on the road surface.

The Dawn Mining Company has stated they would suspend operations during inclement weather conditions, however, roadway surface conditions, not weather, is the main concern. Unfortunately, it is difficult to predict roadway surface conditions from forecasted weather. For example, during my field study on December 5th, 1997, conditions were cool and dry with clear skies and the high temperature in Reardan in the middle thirties. These are typical conditions for late fall and early spring. Frost was on the roadway during the morning hours with a considerable amount remaining throughout the day on the grade approaching and to the south of the Spokane River (MP 43.6 to MP 44.5). This downgrade is on a north facing slope and is shaded for most of the day. It had frost on the roadway surface the entire day I visited this corridor. I anticipate that this section of roadway with its nearly 6% grade for downhill trucks will have reduced traction roadway conditions with frost or snow for considerable amounts of time during late fall and winter. As previously mentioned, this section contains non standard barrier protection, an embankment of approximately 100 feet in height, and a horizontal curve of less than 900 foot radius just prior to the Spokane River bridge.

Trends

Based on accident information contained in the 1991 FEIS, 1994 FSEIS, and the 1997 WSDOT safety study, there is a trend of increasing accidents on SR 231 within the corridor between the years of 1983 and 1995. Average total yearly accidents within the corridor are as follows for the given time period: '83 to '86 = 7.8 accidents/year, '87 to '89 = 10 accidents/year, '90 to '92 = 10 accidents/year, '93 to '95 = 12.3 accidents/year. Based on the proceeding data, there has been a steady increase in accidents in the SR 231 corridor from the early eighties to the middle nineties. It is also seen that over half (52%) of the reported accidents in the WSDOT safety study involved injury or death, with a total of 58 injuries and one fatality occurring in the 60 accidents reported in the study. If the current DMC proposal is implemented, it is more likely that this trend of increasing accidents will continue.

The 1991 FEIS shows specific data on accidents involving large trucks. It is seen that between the years of 1983 and 1987, nine accidents involving large trucks occurred within the corridor. There were 39 total accidents during this time period, thus 23% of these accidents involved large trucks. Because the accident data reported in the 1997 WSDOT safety study did not include a key for the vehicle type code, it is difficult to readily determine the amount of large vehicles involved in the accidents reported in this study. However, it is very likely that whatever the percentage of accidents involving large trucks in the WSDOT safety study is, this percentage would significantly increase if the current DMC proposal is implemented.

Conclusion

This report and the engineering analysis contained herein is intended to serve as more than simply an analysis of existing roadway conditions within the SR 231 corridor between the towns of Reardan, WA and Ford, WA. Rather, this report is intended to analyze the safety related impacts to SR 231 with respect to the consistent transport of hazardous material with large trucks over a long period of time.

Based on my analysis, it is my opinion that if the current DMC proposal is implemented, roadway safety in a number areas will be negatively and significantly impacted. The 395% to 600% increase in large trucks will compound the safety concerns in a number of small (< 900 foot) radius horizontal curves that have lane and shoulder widths that do not meet the Modified Design Level. The most significant of these concerns include large trucks off-tracking and crossing the roadway centerline. Existing lane and shoulder widths within the corridor were found to be significantly narrower than those reported in the WSDOT safety study, and the introduction of a 395% to 600% increase in the wide large vehicles is a concern considering the lane and shoulder widths found.

The impact to safety at school bus stops within the SR 231 corridor was also found to be significant, especially for elementary school students. These concerns are based on a number of factors, including the increased braking time required by large vehicles, especially at bus stops where braking sight distance between highway traffic and stopped buses is limited. Also of concern is introducing a significant increase in large trucks on the highway to young, inexperienced pedestrian school children, many of whom are at an age where depth perception and peripheral vision are not yet fully developed. Any proposal to restrict large trucks during school pick up and drop off times should be met with scrutiny as school children are often transported outside the normal morning and afternoon times and enforcement and implementation of such large truck transport restrictions can be difficult.

Mitigative measures that can be helpful in addressing "leave the highway" types of accidents are not present at many locations within the corridor. Field investigation showed that many locations within the corridor where these types of accidents are of concern could benefit from guardrail installation or hazard removal from clear zones. Approximately 87% of all non intersection accidents reported in the WSDOT safety study involve vehicles that either left the highway or likely would have had guardrail not been present. In addition, nearly a mile of existing guardrail within the corridor does not meet current WSDOT standards. Large trucks that in an accident could leave the roadway and spill their load of hazardous materials present a significant environmental concern as well, particularly if the spill occurs at the Spokane River or one of its tributaries.

The introduction of a huge increase in large trucks would significantly impact overall traffic operations on the many grades within the corridor, particularly the over mile long northbound grade situated just north of the Spokane River. There will be an incentive for the operators of large trucks to speed on the approaches to upgrades in order to maintain their speed for longer distances. The huge speed differential between the normal traffic stream and large trucks on significant upgrades will tend to increase motorist frustration and encourage passing although a significant amount of no passing zones are present of these grades. In addition, large trucks within the corridor will have to negotiate frost, ice, and snow roadway conditions for considerable amounts of time during the late fall and winter.

As outlined above, the DMC proposal will negatively impact roadway safety in a number of areas. As these negative impacts are realized, so typically are an increase in traffic accidents due to the increase likelihood for accidents these negative impacts create. I am of the opinion that the accident rate within the SR 231 corridor will increase if the current DMC proposal is implemented. I would also expect that due to the type of vehicle that would most significantly increase within the corridor, namely large trucks, the severity of accidents will also likely increase due to vehicle size and associated concerns such as increased linear momentum and braking time.

Since SR 231 is the primary commuter route for the Spokane Indian Reservation residents and Tribal employees, the Tribe will be particularly affected by the impacts of the current DMC proposal and the probable increase in total accidents and accident severity.

5.13 Responses to Givens, Funke & Work Comments

- 13.1 – USACE will review the contractor's transportation and disposal plan to ensure that it complies with all applicable or relevant and appropriate laws, regulations and executive directives, and is protective of human health and the environment. Specifically, USACE will comply with the Executive Memorandum signed April 29, 1994 by President Clinton which implements requirements for federal actions affecting Indian Tribes and Nations, to the extent applicable and appropriate. Transportation or disposal plans that are judged to be in violation of applicable or relevant and appropriate laws, regulations or executive directives or present an unacceptable risk will not be approved. It is the USACE position that all aspects of the remediation, including transportation and disposal, will be conducted in a manner to minimize risk to public health and the environment.
- 13.2 – The selection of the ultimate disposal site will be addressed as part of the Remedial Action phase of the cleanup using the standard government procurement procedure after completion of the remedial design and prior to commencement of the remedial action.
- 13.3 – USACE will review the contractor's transportation and disposal plan to ensure that it complies with all applicable or relevant and appropriate laws, regulations and executive directives, and is protective of human health and the environment. Specifically, USACE will comply with the Executive Memorandum signed April 29, 1994 by President Clinton which implements requirements for federal actions affecting Indian Tribes and Nations, to the extent applicable and appropriate. Transportation or disposal plans that are judged to be in violation of applicable or relevant and appropriate laws, regulations or executive directives or present an unacceptable risk will not be approved. It is the USACE position that all aspects of the remediation, including transportation and disposal, will be conducted in a manner to minimize risk to public health and the environment.
- 13.4 – The selection of the ultimate disposal site will be addressed as part of the Remedial Action phase of the cleanup using the standard government procurement procedure after completion of the remedial design and prior to commencement of the remedial action.



COMMENTS

Proposed Plan for the Ashland 1 and Ashland 2 Sites

**US Army Corps
of Engineers.**

Written comments will be accepted if postmarked by January 8, 1998
20

1/18/98

14.1 We, as local residents, would opt for Alternative 2 (pg 6 - Proposed Plan for The Oakland I and Oakland 2 Sites) as the preferred cleanup remedy to be undertaken.

^{Residential}
These materials have been in our midst since 1946. We feel the time has come to remove it all! Residential and Industrial development will bring us all closer to this site eventually.

Robert Poltunich

Donald Poltunich

If you would like to receive a copy of the Responsiveness Summary or would like to be added to our mailing list, please fill in your:

Name: _____

Address: _____

RECEIVED

JAN 20 1998

USACE Buffalo District
Tonawanda FUSRAP Office

*We are on
your mailing
list already.*

Responsiveness Summary? Yes X

Mailing List? Yes _____

5.14 Response to Poltowicz Comment

14. – The revised PP for the Ashland sites is one component of the CERCLA documentation of the remediation of the Tonawanda Site as a whole. The document distributed for public comment represents the final version of the revised PP, based on the RI/FS published in 1993 and comments received on that document relevant to the Ashland sites, the guideline derivation document published in July 1997, and the USACE version (Alternative 2A) of the originally stated Alternative 2 in the 1993 PP. The USACE Alternative 2A is equivalent to the Alternative 2 developed by the DOE except that a site-specific guideline is used instead of the generic guidelines.

Author: NANCY J STICHT
Date: 1/20/98 5:27 PM
Priority: Normal
TO: FRANK PARSON
TO: DAVID J CONBOY
TO: RAYMOND L PILON
TO: SARAH L SNYDER
Subject: League of Women Voters

----- Message Contents -----

I returned the call which Sara had rec'd from Lee Lambert, League of Women Voters, in which she inquired about the status of her request for an extension of the public comment period. Prior to my call to her, I spoke with Frank Parson to clear with him the fact that I was going to let Ms. Lambert know that we had received her letter and were working on a response. Frank asked me to relay the following message: if the League can provide more specific rationale regarding impact or a compelling reason why their comments could not be submitted on a timely basis, we would consider that information in any accommodation decision. (Also, I now understand from Frank that FACTS IS going to present their comments today and only supplement their comments with additional materials by next week. When I spoke with Sara at 5:00, Jim Rauch was at the Public Info Center, making copies of the attachments to his comments.)

15.2 15.1
Ms. Lambert stated that she was speaking on behalf of "the group called FACTS" as well as for all citizens' rights. She said that the League did not become aware of the scheduled public meeting until approx. 10 Dec, and they were unable to attend. Their newsletter had already gone out, so there was insufficient time to relay info to their membership, to perform necessary research, or to set up a meeting of their own to discuss the proposed plan or the League's position. She also expressed concern that FACTS was "shut out of all negotiations".

She needs to know if she must submit her specific concerns in writing or if she could do so verbally; she is awaiting our further instruction on Wednesday morning. (I assume we will discuss at our 8:00 a.m. meeting???)

5.15 Responses to LWV/Lambert Comments

- 15.1 - The PP was issued on November 10, 1997 and USACE granted a 30-day extension to the comment period. An additional 11 days was added to this extension after several members of the public requested additional time for preparing their comments. With the extension, the comment period totaled 71 days. Other extensions were considered, however, USACE determined that additional extensions were not appropriate.
- 15.2 - When FUSRAP was transferred to USACE, Lieutenant Colonel Michael Conrad, Commander of the Buffalo District, met with all key stakeholders for the Tonawanda sites. Three representatives from F.A.C.T.S. were included in this meeting. Representatives of this group also submitted comments, both at the public meeting and in writing. Their concerns, as stated in these comments to USACE, have been considered in the decision regarding the remedy selection, and the responses are included in this Responsiveness Summary.



F.A.C.T.S.

(For A Clean Tonawanda Site)

"PUTTING THE PIECES TOGETHER"



Box 566
Kenmore, NY 14217-0566

Phone: (716) 876-9552
Fax: (716) 876-9552

COMMENTS ON "PROPOSED PLAN FOR THE ASHLAND 1 AND ASHLAND 2 SITES,
TONAWANDA, NEW YORK, NOVEMBER 1997, FINAL, USACE/OR/21950-1029"

James M. Rauch

RECEIVED

January 20, 1998

JAN 20 1998

Opening Comments

USACE Buffalo District
Tonawanda FUSRAP Office

16.1 | 1) We believe the environmental review process for the Tonawanda Site is flawed and raises serious questions that need to be thoroughly and objectively addressed and resolved. See Environmental Review Section and remaining comments.

16.2 | 2) Why are the EPA and the U.S. Nuclear Regulatory Commission (NRC) not involved in the environmental review process? As far as we know, there has been no NRC involvement in the process. Other than as described in comment 37, we know of no involvement by EPA. We believe NRC oversight of this process is necessary. (See U.S. Nuclear Regulatory Commission Is the Authorized Regulator section and comments 14, 16, 18, 19, and 20)

16.3 | 3) We have made repeated requests of the U.S. Department of Energy (DOE) to explain the FUSRAP program. To date, we have not been informed of the legal authority pursuant to which FUSRAP was established. Was FUSRAP established by the Atomic Energy Commission (AEC) or by DOE? Was FUSRAP established by Act of Congress? If so, which Act? Please cite to specific section and/or subsection. Was FUSRAP established under authority granted by the Atomic Energy Act (AEA)? If so, please cite the specific section and/or subsection of the AEA. Was FUSRAP established under authority granted by the Uranium Mill Tailings Radiation Control Act (UMTRCA)? If so, please cite the specific section and/or subsection of UMTRCA. Was FUSRAP established under authority granted by any other statute, regulation or any other legal authority? If so, please cite such authority by title, section and/or subsection.

16.4 | 4) What statute(s) and/or regulations authorize the U.S. Army Corps of Engineers (USACE) to conduct cleanup activities, including but not limited to investigations, removals or remediations or other responses, involving the MED/AEC 11.e.(2) byproduct materials present at the FUSRAP Tonawanda Site? Please cite specific sections and/or subsections of applicable authority.

16.5
5) Former DOE Assistant Secretary Thomas Grumbly made a commitment to the community to provide a sitewide final cleanup plan by the end of 1996 for the entire Tonawanda Site. This was not done. This revised Proposed Plan released by USACE presents final remediation alternatives that address only the Ashland 1 property (now including Area D of the Seaway property) and Ashland 2 property. Why has a sitewide final cleanup plan not been presented? Please provide a thorough, objective explanation. (See comment 14)

16.7
6) The notice issuing this revised Proposed Plan for public comment (11-13-97 Buffalo News) refers to a DOE policy change ("Secretarial Policy on the National Environmental Policy Act, June 1994") and states that USACE will follow the same policy. USACE appears to share the DOE view that community-identified NEPA issues (see comment 21 and Administrative Record) can be avoided simply by issuing a non-promulgated policy statement. Was any rulemaking done by either agency to validate these changes? If so, please describe and provide documentation of same. Does USACE believe NEPA review is not applicable to final remediation decision-making at the Tonawanda Site? If so, please explain fully, citing specific statute(s) and/or regulations and section(s) thereof. (see Environmental Review Process section, comment 33).

16.7
7) a) This revised Proposed Plan presents limited (to Ashland 1 and 2) versions of the draft RI/FS-EIS's sitewide alternatives 2, 3 and 6, and a new alternative, 2A, that is not analyzed in the 1993 draft RI/FS-EIS. The rudimentary information and analysis given in the revised PP for these limited alternatives is insufficient to satisfy the public review requirements of NEPA and CERCLA (see comments 12, 14, 16 to 18, 21 to 32, and 36). b) The draft RI/FS-EIS itself is deficient in certain respects regarding NEPA and CERCLA requirements (see comments 12, 13, 15, 17, 21, 23, 27, 30 to 32, 37 and 38). c) The draft RI/FS-EIS is geared to an analysis of sitewide alternatives and lacks the breakdown of information and analysis (e.g. costs) necessary to compare the non-sitewide, limited alternatives of this PP to each other or to the sitewide alternatives in the meaningful way provided for by the NEPA and CERCLA public review processes (see comments 14, 16, 18, 26 and 31). d) The narrowed scope of the PP alternatives also raises issues of segmentation of the review process (see comments 14, 16, and 17). e) A supplement to the draft RI/FS-EIS to correct these obvious deficiencies must be prepared and subjected to public review.

16.8
8) Our review of the Administrative Record shows it to be incomplete. We request that all documents listed as references in the 1993 draft RI/BRA/FS/PP-EIS documents and those documents' references be made part of the Administrative Record, whether they are physically placed in the record or incorporated by reference. We also request that the documents described in the attached list of reference documents to these comments be incorporated into the Administrative Record. According to staff at the Tonawanda Public Information Center, DOE/USACE has no record of much of the correspondence on this list.

U.S. Nuclear Regulatory Commission Is the Authorized Regulator

16.9 9) We think the U.S. Nuclear Regulatory Commission (NRC) is the agency responsible for regulating the management and disposition of all the MED/AEC 11.e.(2) byproduct materials present at the Tonawanda Site properties. Title II of the Uranium Mill Tailings Radiation Control Act of 1978 (UMTRCA), which amends the Atomic Energy Act of 1954 (AEA), specifically directs the U.S. Nuclear Regulatory Commission (NRC) to control the management of any 11.e.(2) byproduct materials. This includes such materials located at inactive uranium mill tailings sites such as the Tonawanda Site.

16.10 10) To implement the requirements of UMTRCA, NRC modified its Title 10 Part 40 regulations "Domestic Licensing of Source Material", including sections 40.2a, 40.3, and 40.21. What persons are currently authorized to receive, possess, use, transfer, provide for long-term care, deliver, and/or dispose of the byproduct materials located at each of the five FUSRAP Tonawanda Site properties: Linde, Ashland 1, Ashland 2, Seaway, and the Town of Tonawanda Landfill? In each case, please identify the specific license granting such authority and the name and address of the authorized person.

16.11 11) Over the last 10 years the NRC has developed a program for remediation of problematic contaminated sites, the definition of problematic including sites with large volumes of contaminated soils. Known since 1991 as the Sites Decommissioning Management Plan (SDMP), this program oversees the cleanup of both licensed and unlicensed sites. The program is described in NRC report NUREG-1444 and several other reports including the April 1992 SDMP Action Plan (57 FR 13389). For a site to be listed in the program it must meet one or more of five qualifying criteria. Though all the Tonawanda Site properties do meet many of these qualifying criteria, none of the properties has been listed in the SDMP program. We believe this represents a significant oversight by NRC. Almost two years ago, we asked NRC to assume its statutory responsibilities at one of the Tonawanda Site properties, i.e. to regulate the release of radon gas from a controversial active gas extraction/cogenerator system being installed at the Niagara Landfill on the Seaway property (see references 56 to 66 and FOI list 1). We made this request after learning that New York State's failure to implement the necessary regulations and program on the state level, as specified by UMTRCA, had resulted in the State's loss of authority over 11.e.(2) byproduct materials no later than November 8, 1981 (see references 18 to 19, 59, and 70), which authority and jurisdiction then reverted to NRC. Over this same time period, we have notified NRC, by copy of correspondence to NYS and DOE, of problems with the interim actions at Linde (see comments 19, and 20).

16.12 12) We believe that the cleanup guidelines used by NRC in its SDMP program are applicable guidelines, under Sec. 84.a.(1) of UMTRCA, to remediation of the Tonawanda Site. The April 1992 SDMP Action Plan lists the cleanup criteria for SDMP sites; these criteria have been consistently applied to cleanup of listed SDMP sites. The action plan list includes the "Branch Technical Position (BTP) on Disposal or Onsite Storage of Thorium or Uranium Wastes from Past Operations"

(46 FR 52061), the Office of Nuclear Material Safety and Safeguards' Policy and Guidance Directive FC 83-23, and EPA's Interim National Primary Drinking Water Regulations (40 CFR Part 141). Since the Tonawanda Site properties meet many of the SDMP's qualifying criteria, there is no reason that these cleanup guidelines should not be included in the environmental review. The SDMP guidelines are the best available guidelines for a site of this type, even if the site has not been listed in the program. In addition to these guidelines, Sec. 84.a(2) of UMTRCA requires that NRC management of all 11.e.(2) byproduct material at Title II uranium byproduct material sites such as Tonawanda conform to 40 CFR Part 192 sections 192.30 to 192.34, as well as the regulations prescribed therein. Also, the SWDA/RCRA requirements specified in Sec. 84.a.(3) of UMTRCA must be met.

16.13 13) With respect to 40 CFR 192 Sec. 192.33 "Corrective action programs," in my comments on the draft RI/FS-EIS (see comment 31, reference 3), I said that water from well B29W09D at Linde contained radium-226 in concentrations exceeding the EPA drinking water standard of 5 pCi/l (draft RI pp 4-216, 4-217, 7-18) and I called for further evaluation of groundwater impacts and the identification of potential remediation techniques. In response, DOE maintained that, since groundwater in the area is not currently used for drinking water, drinking water guidelines are not applicable. However, according to NYS DEC, "(a)ll fresh groundwater in the State is classified as GA, with an intended best usage as a source of drinking water ... regardless of its current use." (see pp 24 and 25 of enclosure to reference 4) Section 192.33 requires that a corrective action program "be put into operation as soon as is practicable, and in no event later than eighteen (18) months after a finding of exceedance." To our knowledge, no such action has been taken. Why not?

Segmentation of Review Process

16.14 14) a) This revised PP proposes a final remediation plan. In view of its location between the Ashland properties, we believe the exclusion of the Seaway property from review and remediation concurrently with the Ashland properties is a clear violation of the NEPA prohibition against segmentation of the review process: there are obvious cost economies of scale to be had in performing remediation of all three properties together; and groundwater impacts should be addressed in a sitewide manner (see comments 13 and 15). What is USACE's current plan for final remediation of this property? If there is none, why not? b) A provision of the August 6, 1996 agreement between Congressman LaFalce (and the CANIT politicians) and DOE, to which other stakeholders including F.A.C.T.S. were not party (see references 45 to 47, 15 to 17, 20, 21, and 77), is to leave the "access-restricted" wastes in Areas B and C of the Seaway property. Leaving 11.e.(2) wastes (25,900 cubic yards, by draft FS-EIS generic guidelines) in a biogas-generating municipal landfill is unacceptable according to current waste management practices (e.g. see section IV 6.d.(c) of DOE Order 5400.5). Is this USACE's intention? c) Via our FOIA requests, we have discovered what we believe is evidence of a possible indemnification arrangement between DOE and Browning-Ferris Industries, operator of the Niagara Landfill at the Seaway property. We are concerned that such an arrangement, if consummated, may be

behind DOE's agreement with the CANIT politicians not to excavate Seaway Areas B and C. Information which may confirm this possibility is one of the matters currently the subject of F.A.C.T.S.' litigation (see FOI list 1b). What is USACE's knowledge of this matter, if any? This is a matter requiring investigation and resolution prior to the remediation decision.

16.15 15) The issue of groundwater impacts must be addressed on a sitewide basis rather than a property-specific basis. NEPA requires that cumulative impacts be addressed together; NEPA prohibits segmentation of the review process. The analyses used in all draft BRA exposure scenarios (p B-2), and in the "Radionuclide Cleanup Guideline Derivation for Ashland 1, Ashland 2, and Seaway, Tonawanda, New York, September 1997" (p 16 of reference 80) incorrectly ruled out groundwater as an exposure pathway - see comment 13 above. Also, in the "Derivation of Uranium Residual Radioactive Material Guideline for the Ashland 1 and 2 Sites, August 1988", the perched groundwater system was ruled out (p 5), even though this unit is capable of useable flow rates. Accordingly, these analyses should be revised. (See comments 7, 17)

16.16 16) We have criticized the decontamination of buildings at the Linde property as being wasteful, particularly in view of the radium cleanup criteria issue (see comment 19), compared to the less costly demolition of the buildings prescribed by the community-supported draft FS-EIS's Alternative 2 (all four buildings were to be demolished at a direct cost of approximately \$1.5 million [lines 2a, 2b, and 2c on p G-29]). So far, approximately \$8 million has been spent on building decontamination (see reference 42). We have asked USACE for an updated total of building decontamination costs. Please supply the evaluation referred to in response 8 of enclosure to reference 21. Since "too-high" cost has been frequently cited by DOE as a reason for not employing more stringent cleanup guidelines, we believe these excessive interim action costs are prejudicing the final sitewide remedy selection process, and therefore, represent segmentation of the review process (see comments 14, and 26).

16.17 17) The proposed action is the final remediation of Tonawanda Site properties identified as being contaminated with MED/AEC wastes. However, the full extent of MED/AEC contamination has not been determined and included in the review process. The NEPA/CERCLA process requires an objective assessment of the cumulative impacts of a proposed action. The draft RI states (p 7-38) that two vicinity properties, the Conrail property to the northeast of Linde and the Niagara Mohawk property adjacent to Seaway, are contaminated and will require designation into the Tonawanda RI/FS-EIS review process and that additional properties, R. P. Adams and the Town of Tonawanda landfill will require further investigation. The extent of major underground contamination at Linde associated with the injection wells has not been adequately addressed (see comment 13). The streambed of Twomile Creek, the G. K. Hambleton property and the Benson Development Co. property adjacent to Ashland 2 may also be contaminated. There may be others. The Town of Tonawanda landfill is said to contain over 15,000 cubic yards of contamination (EMAB, see reference 2) resulting from the deposition of sediments dredged from Twomile Creek. This

property contains material with the highest average radium concentration (68 pCi/g) and total activity of any of the properties (EMAB). We have been told that the Town of Tonawanda landfill was designated into the remediation process in December 1992. But it was not included in the draft RI/BRA/FS analyses, nor were any of these other properties with the exception of the Niagara Mohawk property (pp 4-1, 4-2 of the draft FS). Have any of these properties or any other vicinity properties been designated for cleanup? Please supply information documenting why or why not in each case.

Volumes of Contaminated Soils/Sediments

81.71 18) This revised Proposed Plan's alternatives cover only the Ashland 1 property, including Seaway Area D, and Ashland 2 property. The revised PP does not give contaminated volume figures for any of the alternatives (see comment 7a). The contaminated volumes ("of soils") for Alternative 2 and Alternative 2A were given by USACE in a handout (see reference 78) at the December 17, 1997 public hearing only. The contaminated volume given in the handout for the limited version of the draft FS-EIS's Alternative 2 is 85,000 cubic yards. We question the validity of this volume. This volume is much less than half that determined by the draft RI/FS-EIS (a \$6 million dollar study) for these properties: 172,300 cubic yards. This is a discrepancy of more than 87,000 cubic yards. [See details in brackets below] We find this to be incredible. It suggests to us that assumption of the environmental review process by NRC may be necessary (see comment 9). A supplement to the draft FS is required. Does the revised PP volume include contaminated sediments? According to the draft FS, these total 10,150 cubic yards. Please provide a detailed explanation of the method(s), e.g. computer model(s), used to calculate the volumes for the draft FS and the revised PP, and fully describe all differences. The method(s) employed must be acceptable to NRC, with regard to 11.e.(2) material, and NYS/EPA, with regard to non-radiological MED/AEC contamination (chemical COCs).

[The description of the contaminated soil and sediment volumes in the draft FS (pp 4-4, 4-7, and 4-8) provides no property-specific breakdown (it was prepared assuming uniform sitewide cleanup): it lists 310,000 cubic yards (cy) of accessible soils, 31,300 cy of "access-restricted" soils and 10,150 cy of sediments; for a total of 352,300 cy. However, EMAB previously reported (reference 2) property-specific volumes for the draft FS's Alternative 2 (determined using the same draft FS Table 3-1 generic guidelines used in the draft FS: 5/15 pCi/g for Ra-226 and Th-230, and a Tonawanda site-specific guideline of 28.4 pCi/g for U-238). The EMAB volumes are 120,200 cy for Ashland 1, 52,100 cy for Ashland 2, and 117,000 cy for Seaway (with no breakdown by area, however, Areas A and D together contain 91,000 cy [NYSDEC]). The EMAB sitewide totals are consistent with the draft FS totals if the 15,200 cy EMAB lists for the Town of Tonawanda landfill are included in the draft FS total although the draft FS makes no such statement (see comment 7b). Therefore, not including Seaway area D, the draft FS Alternative 2 total for Ashland 1 and 2 is 172,300 cubic yards. Using the same generic guidelines as the draft FS-EIS, USACE now lists a contaminated soil volume of 85,000 cubic yards for Ashland 1 (including Seaway Area D) and Ashland 2.]

Interim Removal Actions

16.19 19) a) It is our understanding that interim actions must meet all applicable guidelines (see reference 71). We raised the issue of criteria applicable to the building decontamination interim actions at Linde in our December 20, 1996 comments (reference 68) on the November 1996 interim action "EE/CA for Building 30 at Praxair." Subsequently, we learned the surface decontamination criteria for radium were recommended by Oak Ridge National Laboratories (ORNL) for the decontamination of the Linde buildings based on findings contained in the May 1978 ORNL survey report for Linde (see first enclosure to reference 18). These radium criteria are fifty times more stringent than the uranium criteria selected by DOE. We asked both DOE and NYS Department of Labor to address this issue (see references 18 to 21). NYS DOL responded that they had no jurisdiction over the matter (see FOI list 2). DOE evaded the issue. Neither DOE nor USACE has issued a response to comments on this EE/CA. The work continues using the fiftyfold less stringent uranium criteria (see references 50, 51). Why?

b) The revised PP (p 1) states that there will be no further review of the buildings at Linde following completion of the interim actions because "remediation of the Linde buildings has been addressed separately using Engineering Evaluations/Cost Analysis (EE/CA) documentation and public reviews." This implies that these interim actions constitute final remediation. When recently confronted on this issue, USACE (Bechtel) responded that other information was available contradicting the findings of ORNL. We asked for that information; no such information has been provided. If any such information exists, we ask that it be provided. We have no reason to believe either the ORNL experts' findings or recommendation to be incorrect, and so, we must conclude that DOE/USACE are willfully failing to employ appropriate radium decontamination criteria necessary for unrestricted release of these buildings. We believe this will result in workers being exposed to higher doses than would be the case if NRC were fulfilling its regulatory responsibilities at the Tonawanda Site.

16.20 20) Since the mismanagement of R-10 residues at the Niagara Falls Storage Site (see pp 1 to 8 of reference 5), we have been concerned that soil cleanup will not be performed properly at the Tonawanda Site. Regarding the soil pile at Linde, we raised this issue in our comments on the January 1996 "EE/CA for Praxair Interim Actions" and subsequently we repeated our concerns (see references 66, 15, and 20). It is unclear to us, just how the removal of the pile to Building 30 and the segregation of contaminated material from "clean" material was done. Our understanding is that only contaminated materials went into the pile. What guidelines and process were used to separate "clean" material from the 3700 cubic yards of material reported as being shipped to Envirocare? Are the guidelines used as protective as the NRC's SDMP program guidelines? What has been done with the material not shipped? Please explain in detail. In addition, we wonder why NYSDEC, has continued to act as if it has regulatory authority over these 11.e.(2) wastes, after being informed by NRC that it lacked jurisdiction over these materials (see comment 9 and Administrative Record). We wonder why DOE and now USACE are willing to participate

in this chicanery.

Long-term Protectiveness

16.21 21) None of the alternatives provides sufficient long-term protectiveness. From the outset of the review process, long-term health risks have been identified by the community as a primary issue. NEPA requires all relevant and cumulative impacts be objectively addressed. The 11.e.(2) materials are very long-lived radioactive wastes; they will remain hazardous for hundreds of thousands of years. The CERCLA-based 1000 year timeframe employed in the guideline derivation and risk analysis is far too short time period to fairly apprise the public of peak doses and long-term adverse health impacts resulting from ingrowth of radium from the guideline level of thorium proposed to be left behind at the properties. We think a minimum 10,000 year timeframe is appropriate, as is used for other long-lived radioactive wastes (see reference 79 and comment 43 of reference 3). We suspect the main reason DOE, and now USACE, seek to use only the CERCLA review process is to avoid this NEPA issue. (See comments 6, 25, and 26) We suggest that an objective study be done to estimate the sitewide, long-term (at least 10,000 years) cumulative morbidity and mortality costs associated with Alternative 1 using a limited resident farmer scenario (see comments 15 and 23).

16.22 22) The site-specific thorium guideline of 40 pCi/g (see comment 36) was chosen because it represents the greatest concentration of thorium that can be left behind that will not result in exceedance of EPA's 15 pCi/g subsurface radium guideline (40 CFR Part 192) for the next 1000 years (due to radium ingrowth from thorium [pp ES-3 to ES-5 of reference 80]). What is not said is the fact that ongoing radium ingrowth will result in a radium concentration peak of almost 40 pCi/g approximately 8000 years beyond the CERCLA timeframe modeled. Please provide peak doses and the associated risks resulting from radium ingrowth from the site-specific guideline levels of thorium and uranium for all proposed alternatives. The future date of occurrence of the dose peaks also should be presented (see comments 7a, 7b, 7e, 25, and 26).

Future Land Use

16.23 23) Cleanup guidelines should be adjusted to protect future site users. It is unlikely, but certainly not inconceivable, that a resident farmer use could occur on these properties at some time in the future. The land is certainly capable of supporting such use as evidenced by early town history. The Ashland 2 property is re-vegetating nicely and is increasingly attractive to recreationists and wildlife, including deer. We think it is very reasonable to expect that future land uses for these waterfront properties will include various residential occupancy styles, including single family, with or without basement, duplexes, condominiums, etc. Some of these residences are likely to have home vegetable gardens. Simply because the existing use is a less intensive use and the current Town Master Plan does not currently contemplate residential uses in certain areas is no reason to believe such use patterns will not change. Therefore, a resident scenario that includes limited food and water ingestion

pathways is a reasonable future use and environmental review should include such a use (see comment 21).

16.24 24) The revised PP's thorium guideline is not sufficiently protective of such expected future residential users. Under the modeled urban resident use scenario, which assumes no food or water pathways and no clean cover, the proposed site-specific 40 pCi/G Th-230 cleanup guideline (Approach 2) is estimated to result in a dose, not including radon inhalation (see comment 25), of 86 millirems/yr. This dose is roughly 9 times the NYSDEC TAGM - 4003 dose guideline of 10 millirems/yr, and certainly not an ALARA (as low as reasonably achievable) dose. With 8 inches of clean soil cover, the dose is reduced to an estimated 13 millirems/yr, still in excess of the TAGM; however, ensuring that the cover remains undisturbed requires institutional controls (deed restrictions). We have little confidence in the long-term effectiveness of such controls (for even hundreds of years, when the duration of the radioactive hazard is hundreds of thousands of years). (Also see comment 25)

Radon Doses

16.25 25) a) Radon doses attributable to the 11.e.(2) material should be calculated and included in the total doses reported to the public. The 40 pCi/g Th-230 cleanup level allows radon doses from the 11.e.(2) material that are too great. Inhalation of radon gas from uranium mill tailings is the major component of the total dose at sites such as the Tonawanda Site, yet it has been DOE policy, adopted now by USACE, not to include radon doses attributable to the tailings in determining compliance with the basic dose guideline. This policy does not meet the NEPA requirement that all relevant impacts be objectively reviewed. Instead, an exercise is done to demonstrate compliance with EPA's 4 pCi/l guideline for radon in indoor air. According to the industrial worker exposure scenario used for the Ashland properties, an industrial worker exposed to EPA's guideline concentration will receive approximately 200 millirems/yr of dose from radon. At 1000 years, we believe a major portion of this dose will come from the 11.e.(2) waste material left behind following cleanup (to the 40 pCi/g Th-230 Approach 1 cleanup level). For the residential scenario, the radon dose will be approximately 500 to 800 millirems/yr, again with a major portion of the doses coming from the 11.e.(2) material. For each of these scenarios, at the end of the 1000 year time period modeled, what are USACE's conservative estimates of the portion of these radon doses originating from the 11.e.(2) materials? In addition, without radon mitigation measures, the EPA guideline may be exceeded after 1000 years due to radium ingrowth from the 40 pCi/g residual thorium level. What are the peak indoor radon concentrations estimated to be under both Approach 1 and Approach 2 for the urban resident scenario? When will these peak concentrations occur?

b) We believe NRC's approach to this radon problem as embodied in the SDMP program's BTP guidelines to be more rational. The BTP presents two choices for managing uranium wastes such as those at the Tonawanda Site. Option 1 allows unrestricted use following cleanup by requiring that residual levels of Ra-226, Th-230, and U-238 (members of the natural uranium decay chain) be reduced to no more than 5 pCi/g.

Option 2 allows residual levels of these decay chain members up to 20 pCi/g (based on limiting radon exposure to approximately the EPA limit of 4 pCi/l) but requires four feet of clean cover soil. Option 2 is only applicable to properties zoned for industrial use. A covenant identifying the radioactive materials present and specifying that the land may not be used for residential building must run with the land. (See comment 24)

Costs

16.26 26) We are aware of no efforts on the part of DOE to identify potentially responsible parties at the Tonawanda Site (see comment 32). Since such an issue has been made of "too-high" cost by DOE/USACE with respect to thorough, sitewide cleanup, we believe identification of PRPs prior to any cleanup decision is necessary to avoid the public perception that cost was the overriding factor in the decision. To put the cleanup cost issue in perspective, we have often pointed out the cost of implementing sitewide Alternative 2 is roughly half the cost of a single space shuttle mission (see reference 16).

16.27 27) The revised PP provides no breakdown of cost components for the implementation of each alternative, as was done in the November 1993 draft RI/FS-EIS. The validity of the cost data presented in the draft FS-EIS were the subject of intense criticism by the community (e.g. see comments by George Melrose). The main components cited as being significantly inflated were unit transportation costs, unit disposal costs, management overhead, and unreasonably large contingency allowances. An objective, updated RI/FS-EIS supplement providing revised cost components should be prepared and subjected to public review. (See comment 7)

16.28 28) We believe the \$270/cubic yard disposal cost given for the Nevada Test Site (p 3-13 of reference 54) is artificially inflated and does not reflect the actual cost of disposal. This same report gives a figure of \$94/cy disposal cost for a hypothetical DOE disposal facility (p 4-3 to 4-7). We believe this figure contains components not applicable to NTS, an operating, federally-owned facility. We request a realistic evaluation of NTS disposal costs be performed by an independent agency such as GAO prior to the remedy decision. We expect actual disposal costs at NTS to be both significantly less than \$94/cy and significantly less than Envirocare's current charge. (Also see comments 30 and 31).

16.29 29) The commercial disposal cost (for Envirocare, Clive, Utah) was given in the draft RI/FS-EIS as \$216/cubic yard. Why should a private disposal firm which collects large profits, above and beyond actual disposal costs, be used for disposal when, after the operation closes down in a relatively short while, responsibility for the site will revert to the public sector anyway, either the state or federal government? It makes no sense to the taxpayer. What is Envirocare's current disposal charge?

Offsite Storage Location

30) For us, the selection of the most physically suitable long-term

16.30
storage site for the Tonawanda Site wastes is an essential part of the review process. We raised this issue often at meetings of CANIT and reiterated it in a letter to DOE's James Owendoff (see references 15 and 16). Not all disposal facilities licensed to accept 11.e.(2) material are equivalent in this respect. The best physical location will provide the longest duration of waste isolation and avoid most (if not all) costs of active maintenance (see pp 8, 9 of reference 5). We believe the playas of the Nevada Test Site to be at least equivalent to Envirocare's Clive, Utah location in these respects. Does USACE agree? If not, please explain why not. (Also see comment 28)

16.31
31) DOE has designated Tonawanda Site wastes as "non-defense" wastes which are not eligible for storage at NTS under DOE's current regime. This makes no sense to us or the National Academy of Science's National Research Council (see p 36 of reference 69), especially in view of the fact that the Linde uranium refinery operated under MED/AEC contracts to produce uranium destined for atomic bombs. What is USACE's opinion on this matter? What can be done about this situation?

Identification of Potentially Responsible Parties (PRPs)

16.32
32) It is a requirement of CERCLA that potentially responsible parties (PRPs) be identified and pursued for recovery of remediation costs. As far as we know, this has not been done for any of the Tonawanda Site properties. Congress pointedly reiterated this mandate in the Conference Report attached to the FY 1998 Energy and Water Development Appropriations Act, saying "the Corps of Engineers is expected to immediately pursue cost recovery from the responsible parties at FUSRAP sites either through a negotiated settlement or a court action." What are USACE's results in this regard? We expect this fundamental requirement will be met before any decision is made. Information provided under Freedom of Information (FOI) requests reveals the following:

With regard to Ashland 1, information we received from the General Services Administration via FOIA request (see FOI list 3) shows that the Ashland Oil Company did know of the MED/AEC contamination when they purchased the Haist property at GSA auction through quitclaim deed in 1960 (contrary to DOE's Authority Review document, reference 72, part of FOI list 1), and that before purchasing the property Ashland sought assurance that it would not be held liable for any subsequent decontamination of the property. We also note that according to various DOE documents (see references 52, 53) the wastes when deposited in the forties contained approximately 0.54% uranium. Possession of such materials containing 0.05% or more of uranium, by weight, required a license from AEC. We are awaiting receipt via FOIA to DOE Oak Ridge of the 1958 AEC radiological survey report which reportedly formed the basis for free release of the property (see FOI list 4). Presumably this report will help establish if there were licensable concentrations of uranium present at the time of the sale. If so, does AEC's failure to license the transfer of the MED/AEC wastes to Ashland Oil as required under the applicable 10 CFR Part 40 regulations establish some portion of federal liability for the cost

of remediation of this property?

With regard to Ashland 2, Ashland Oil Co. transferred wastes from Ashland 1 to both Seaway and Ashland 2 between 1974 and 1982. New York State was the responsible regulator, federal licensing authority over these materials having been delegated by AEC to the state through the 10-15-62 State Agreement (see reference 70). The NYS Department of Labor reportedly established control over the Ashland MED/AEC wastes by letter dated 9-11-78 (see reference 74, part of FOI list 1). However, transfer of wastes from Ashland 1 to Ashland 2 continued into 1982, according to DOE (draft BRA p 1-10). Does New York's failure to exercise license control over the Ashland 1 materials, thereby allowing Ashland to transfer portions thereof to both the Seaway property and Ashland 2, establish some portion of state liability for the cost of remediation of these properties? We note that NYS regulatory authority over these materials apparently reverted to NRC no later than November 8, 1981 (see comment 9), possibly before the transfers to Ashland 2 and Seaway ceased.

With regard to Linde, we have requested via FOIA to DOE Oak Ridge the MED/AEC uranium production contracts with Linde (as they are identified on page 127 of reference 54) and documentation of the decontamination and decommissioning activities performed prior to release of the MED/AEC uranium refinery operations to Linde (see FOI list 5). As with Ashland 1, presumably this information (contract conditions governing wastes and radiological surveys done before AEC vacated the premises) will help establish the extent of federal liability for remediation at this property, if any. We note that documents uncovered in the course of a New York State Assembly investigation in 1981 seem to indicate federal government liability for radioactive effluent injected into onsite wells and released to surface waters and storm and sanitary sewers (see reference 55).

Environmental Review Process

16.33 33) In issuing the 1988 Notice of Intent to Prepare an Environmental Impact Statement to evaluate alternative remedial actions for the long-term management of Tonawanda Site wastes, DOE determined that "an EIS is the appropriate level of NEPA review necessary to adequately inform decision-makers and the public of reasonable alternatives for minimizing any adverse impacts of the proposed action" (p 1-5 of the draft RI). Public scoping identified long-term health impacts as a primary issue. DOE then prepared and released for public comment in 1993 an environmental review package called a Draft RI/BRA/FS/PP-EIS. In its comments, the community adamantly and overwhelmingly rejected the DOE-preferred Alternative 5, a common theme being this alternative was not sufficiently protective in the long-term (see comment 21). Instead, the community supported Alternative 2, identified in the original Proposed Plan as "Complete Excavation with Offsite Disposal". DOE then "suspended" this integrated NEPA/CERCLA EIS environmental review process in April 1994, saying that NEPA review was not being terminated at the Tonawanda Site, the policy in future would be to "incorporate NEPA values into CERCLA documentation" (see references 5 to 17, 20, 21, 23, 24, 43 to 48). In practice, this has not happened (see comment 7). DOE has a record of blatantly ignoring NEPA

requirements at the Niagara Falls Storage Site (see pp 1 to 8 of reference 5); the resulting mess there is now USACE's problem. What will it take to ensure that the remediation of these sites is objectively addressed?

16.34 34) In announcing the "suspension" of the integrated NEPA/CERCLA EIS public review process in April 1994 and on many subsequent occasions, DOE henceforth committed to provide fully informed participation to all interested members of the public in an open decisionmaking process to select a sitewide remediation plan. However, DOE ceased public work plan meetings after the 2-28-95 meeting, and thereafter dealt almost exclusively with the CANiT politicians (see references 43, 44, 1, 5 to 17, 20, 21, and 22 to 36). A second self-serving DOE TAP grant was awarded to CANiT (see references 22 to 34). There were no public meetings from the time of the public meeting on 6-18-96 until the CANiT meeting on 7-1-97 (see references 37 to 42, 45 to 49 and 77). During this period of time, the current proposal was secretly negotiated with the CANiT politicians. Neither F.A.C.T.S. nor other interested members of the community had access to this decisionmaking process. During this period we filed a complaint against DOE in federal district court in an attempt to obtain information responsive to several of our FOIA requests (see reference FOI lists). With the exception of Praxair, representatives of the property-owner stakeholders have not participated at the public meetings (see comments 14 and 32). DOE's failure to adhere to its 1994 commitment has kept F.A.C.T.S. and the interested public at a substantial informational disadvantage. Because of this situation, we requested an indefinite extension of the comment period until this information gap and lag-time could be corrected (see reference 76). It is our understanding that a minimum 30 day extension of the comment period is provided for upon timely request. An eight day (from date of proper notice) extension only was granted.

16.35 35) The Administrative Record contains correspondence between DOE and EPA regarding the hazard ranking system (HRS) score of the Tonawanda Site which shows that based on that ranking the Tonawanda Site should have been placed on the NPL. This was not done. Please explain why the 9-24-87 DOE draft Federal Facilities Agreement was not executed, why EPA did not assume co-lead agency status, and provide EPA's and DOE's documentation of the rationale for why the Tonawanda Site was not placed on the NPL. We note that the 1993 draft RI (p 7-34) reports evidence of offsite migration of contaminated sediments and surface water.

16.36 36) The revised Proposed Plan should contain text explaining that it is but one part of the total NEPA/CERCLA environmental review package on which USACE is seeking comments. This review package should include the new document "Radionuclide Cleanup Guideline Derivation for Ashland 1, Ashland 2, and Seaway, Tonawanda, New York, September 1997" in addition to all the draft RI/BRA/FS-EIS documents. The information contained in the new "Radionuclide Cleanup Guideline Derivation for Ashland 1, Ashland 2, and Seaway, Tonawanda, New York, September 1997" is essential to an informed public review process, yet this document was not distributed to the public along with the revised Proposed Plan at the December 17, 1997 public hearing. Little, if

any, of this information was presented at the public hearing. This is a serious abuse of NEPA and CERCLA public review requirements. NEPA requires that all public comments previously made on the apparently unmodified draft RI/BRA/FS-EIS documents be thoroughly addressed in the final EIS, as well as all current comments on the total review package. NEPA sets specific requirements on the form and content of agency responses to public comments: the final review document must contain a response to comments section in which each comment must be individually identified and paired with a detailed response, unless there are a large number of essentially identical comments. Also, the title of the Proposed Plan misidentifies it as "Final". Under NEPA/CERCLA environmental review procedures, documents made available for public comment are identified as "draft" or "public draft". The "final" documents are issued only following the close of the public comment period. The "final" documents should reflect any and all revisions made as a result of the public comments.

Background Values

16.37 37) Representative area-wide background values for the radionuclides were determined by ORAU. These values are significantly lower than the values from Ashland 2 South that are being used in the calculation of contaminated volumes. We believe the Ashland 2 South values have been biased by their historic proximity to the disposal piles at Ashland 1 and should not be used in calculations to determine removal volumes. The ORAU values given in the draft RI are appropriate.

Source Terms

16.38 38) Please provide estimates of the current source terms for each Tonawanda Site property using all available soil and sediment data. Please provide estimates of the residual source terms for each property following cleanup to 1) the NRC SDMP guidelines, and 2) the 40 pCi/g Th-230 guideline, both approaches.

Miscellaneous Specific Comments

16.39 39) According to DOE, "(1)n general, it is FUSRAP's policy that ownership of 11e(2) byproducts [sic] material at FUSRAP sites remains with the property owner until custody has been transferred to the Department of Energy (DOE)." (see reference 75 and comment 29) We have requested via FOIA to DOE Oak Ridge the legal basis for this policy, both in general terms and in terms specific to the Tonawanda Site properties. This information request is currently being litigated in the U.S. District Court for the Western District of New York (see FOIA list 2). What is USACE's position on this issue? We note that, following enactment of UMTRCA, NRC granted a general license to receive title to 11.e.(2) byproduct material. Does this receipt of title to 11.e.(2) material satisfy the 10 CFR Part 40 section 40.3 licensing requirement to own such material, i.e. is there a distinction between title and ownership?

16.40 40) Regarding the August 1988 "Derivation of Uranium Residual Radioactive Material Guideline for the Ashland 1 and 2 Sites", please confirm that the site-specific guideline for uranium (to meet DOE's

100 millirem/yr basic dose guideline) of 60 pCi/g (28.4 pCi/g U-238) was determined from a resident farmer exposure scenario, and provide a complete description of the scenario's exposure parameters. The dose/source concentration ratio for the external exposure pathway is given as zero in Table 4 (p 9); is this only a typo? Please clarify exactly what "takes up residence in the immediate vicinity of the Ashland 1 and 2 sites" means (p 5). Does it mean within the decontaminated area or outside of it? We also note that Table 3-1 of the draft FS erroneously implies the U guideline is 60 pCi/g U-238.

41) The average radionuclide concentrations given in the draft RI for Ashland 1 (p 4-159) and Ashland 2 (p 4-190) are considerably higher than those given in USACE's the December 17, 1997 public hearing handout (reference 78). Please explain.

5.16 Responses to F.A.C.T.S. Comments

- 16.1 - USACE is addressing the Ashland sites pursuant to the Energy and Water Development and Appropriations Act of 1998, P.L. 105-62, and in compliance with CERCLA, as amended, and the NCP.
- 16.2 - USACE can not address the activities of other federal agencies prior to the enactment of the Energy and Water Development Appropriations Act of 1998, PL. 105-62, which transferred the responsibility for administration and execution of FUSRAP, including FUSRAP actions at the Ashland sites, to USACE.
- 16.3 - USACE is unaware of the specific legal basis for the DOE FUSRAP Program. However, the Energy and Water Development Appropriation Act of 1998, PL. 105-62, transferred the responsibility for and control over the administration and execution of FUSRAP to USACE. USACE is proceeding with the remediation of those sites pursuant to CERCLA (42 U.S.C. 9604 et seq.).
- 16.4 - The Energy and Water Development Appropriations Act of 1998, P.L. 105-62, transferred the responsibility for the administration and execution of FUSRAP from DOE to USACE. USACE is proceeding with the remediation of the Ashland sites in accordance with CERCLA (42 U.S.C. 9604 et seq.).
- 16.5 - Before proposing the plan to remediate the Ashland sites, USACE carefully considered the program management principles set forth in NCP 40 CFR 300.430. Based on those goals it was determined that it was appropriate to remediate the Ashland sites to achieve significant risk reduction quickly while the remainder of the Tonawanda sites are being addressed and to expedite the completion of the total cleanup. It was also determined that the cleanup of the Ashland sites will not be inconsistent with nor preclude implementation of the final remedies at the remaining Tonawanda sites. Pursuant to that determination, and consistent with the NCP, 40 CFR 300.430(f)(2), the decision was made to propose a plan to remediate Ashland at this time and prior to proposing remedies at other Tonawanda sites.
- 16.6 - In accordance with 32 CFR 651.8(a)(8), it is USACE policy that a feasibility study done in compliance with the NCP (40 CFR 300), provides substantive procedural standards to ensure full consideration of environmental issues and alternatives, and sufficient opportunity for the public to participate in the decision making process, making it unnecessary for a separate NEPA document to be generated.
- 16.7 - The revised PP for the Ashland sites is one component of the CERCLA documentation of the remediation of the Tonawanda Site as a whole. The document distributed for public comment represents the final version of the revised PP, based on the RI/FS published in 1993 and comments received on that document relevant to the Ashland sites, the guideline derivation document published in July 1997, and the USACE version (Alternative 2A) of the originally stated Alternative 2 in the 1993 PP. The USACE Alternative 2A is equivalent to the Alternative 2 developed by the DOE except that a site-specific guideline is used instead of the generic guidelines.

- 16.8 – Additional documents that should be considered for inclusion in the Administrative Record, identified and provided, have been placed in the record, as attachments to the comments received. All other appropriate documents have been included in the Administrative Record as well.
- 16.9 – NRC has stated that they do not have jurisdiction over wastes created by MED prior to November 1978. NRC's jurisdiction over byproduct materials began in 1978 and they do not consider it to be retroactive to the time frame when MED material was generated.
- 16.10 – Because NRC does not have jurisdiction over MED wastes created prior to November 1978, USACE is not required to obtain an NRC license for the materials at the Ashland sites.
- 16.11 – Because NRC does not have jurisdiction over MED wastes created prior to November 1978, the Sites Decommissioning Management Plan does not apply to the Ashland sites.
- 16.12 – Cleanup criteria for the Ashland sites were developed using the CERCLA process. The cleanup criteria must satisfy the CERCLA acceptable risk range as well as the ARARs. The Th-230 guideline development considered intended and reasonable future land use, the likely maximum exposed individuals, and the criteria included in the ARARs. The key ARARs included EPA 40 CFR 192 and NRC 10 CFR 20. The result of the guideline development effort was a cleanup criteria of 40 pCi/g Th-230.
- The guideline derivation demonstrated that the conditions at the site, after removing soils exceeding the site-specific derived guideline of 40 pCi/g Th-230, will be protective of human health and the environment, meet the ARARs, and meet the acceptable CERCLA risk range established by the USEPA in the NCP. The analysis also demonstrated that at this cleanup criteria level, the estimated doses to receptors for the intended land uses (commercial/industrial) meet the objectives defined in the to be considered (TBC) guideline of 10 mrem/yr (NYSDEC TAGM 4003) for intended land use.
- 16.13 – These concerns will be addressed when action is proposed at those specific sites. The public will continue to be informed of schedules and actions at the other Tonawanda FUSRAP sites through the continued implementation of the Community Relations Plan.
- 16.14 – Proposing a plan for a separate operable unit of a site is not inconsistent with NEPA compliance. 32 CFR 651.8(a)(8) indicates that completion of a feasibility study prepared in accordance with 40 CFR Part 300 will effect compliance with NEPA by providing a substantive and procedural standard to ensure full consideration of environmental issues and alternatives, as well as full public participation. In this case, an appropriate feasibility study was completed and the process required by 40 CFR Part 300 for proposing a final decision at a portion of the studied site has been properly followed. Therefore, the decision to proceed at the Ashland sites is in compliance with NEPA.
- 16.15 – Proposing a plan for a separate operable unit of a site is not inconsistent with NEPA compliance. 32 CFR 651.8(a)(8) indicates that completion of a feasibility study prepared in accordance with 40 CFR Part 300 will effect compliance with NEPA by providing a substantive and procedural standard to ensure full consideration of environmental issues and alternatives, as well as full

public participation. In this case, an appropriate feasibility study was completed and the process required by 40 CFR Part 300 for proposing a final decision at a portion of the studied site has been properly followed. Therefore, the decision to proceed at the Ashland sites is in compliance with NEPA.

In a March 27, 1998 letter to NYSDEC, USACE responded to NYSDEC questions about groundwater concentrations resulting from residual radioactive contamination at the Ashland sites (USACE 1998). The USACE response described the use of USEPA's VLEACH model to estimate the leaching of radionuclides to groundwater after the sites are remediated in accordance with the site-specific cleanup guideline of 40 pCi/g Th-230 derived from the Ashland sites (DOE 1997).

The modeling used concentrations of total uranium, Ra-226 and Ra-228 and Th-230 estimated by DOE (DOE 1997) to remain on the Ashland properties after cleanup to site-specific guidelines and very conservative assumptions concerning the solubilities of the radiologically contaminated source material. The results of modeling showed that the resulting concentrations of the radionuclides in groundwater would be below federal drinking water standards that have been calculated to be protective of human health and the environment at levels less than 10^{-6} for increased cancer risk.

Based on the conclusions concerning geological conditions that indicate that contaminant leachate from the Ashland properties are not likely to reach groundwater (BNI 1993), and the prediction using the VLEACH model showing radionuclides at levels in groundwater below drinking water standards (USACE 1998), it was concluded that risks to groundwater from radiological contamination will be minimal after the cleanup at the Ashland properties to the site-specific guidelines.

- 16.16 - These concerns will be addressed when action is proposed at those specific sites. The public will continue to be informed of schedules and actions at the other Tonawanda FUSRAP sites through the continued implementation of the Community Relations Plan.
- 16.17 - These concerns will be addressed when action is proposed at those specific sites. The public will continue to be informed of schedules and actions at the other Tonawanda FUSRAP sites through the continued implementation of the Community Relations Plan.
- 16.18 - Documentation relating to calculations used in the cost evaluation of the investigated remedial alternatives (including volume estimates) have been placed in the Administrative Record and are available for public review. A major component of the cost analysis is the volume of the soils determined to require removal and disposal. The cost estimates used for the development of the revised PP used volumes calculated based on a model of the site contamination generated using existing soil contamination characterization results from all historical sampling conducted at the site. The calculations and results of the modeling have also been placed in the Administrative Record.

It should be noted, however, that the cleanup of the Ashland sites will not be driven by any previous or future volume estimates generated by modeling site conditions. The cleanup of these sites will be driven by the established cleanup criteria. The cost estimates and their

corresponding volume estimates were generated and used in the CERCLA process to help evaluate proposed remedial alternatives. The volumes ultimately removed and actual remediation costs will vary as the soils found to require removal during the remediation process are excavated and shipped off-site for disposal.

- 16.19 - These concerns will be addressed when action is proposed at those specific sites. The public will continue to be informed of schedules and actions at the other Tonawanda FUSRAP sites through the continued implementation of the Community Relations Plan.
- 16.20 - These concerns will be addressed when action is proposed at those specific sites. The public will continue to be informed of schedules and actions at the other Tonawanda FUSRAP sites through the continued implementation of the Community Relations Plan.
- 16.21 - Because the primary contaminant is Th-230 (with a 77,000 yr half-life), radon concentration will peak well into the future. However, the radon and radium concentrations estimated for the site after remediation are within acceptable limits over the required 1,000 year review period (40 CFR 192), the maximum time period to be modeled according to regulations, and are not anticipated to be of concern given the site history, configuration, and intended land use. For dose modeling, no credit is taken for backfill materials.
- 16.22 - Cleanup criteria for the Ashland sites were developed using the CERCLA process. The cleanup criteria must satisfy the CERCLA acceptable risk range as well as the ARARs. The Th-230 guideline development considered intended and reasonable future land use, the likely maximum exposed individuals, and the criteria included in the ARARs. The key ARARs included EPA 40 CFR 192 and NRC 10 CFR 20. The result of the guideline development effort was a cleanup criteria of 40 pCi/g Th-230.
- The guideline derivation demonstrated that the conditions at the site, after removing soils exceeding the site-specific derived guideline of 40 pCi/g Th-230, will be protective of human health and the environment, meet the ARARs, and meet the acceptable CERCLA risk range established by the USEPA in the NCP. The analysis also demonstrated that at this cleanup criteria level, the estimated doses to receptors for the intended land uses (commercial/industrial) meet the objectives defined in the to be considered (TBC) guideline of 10 mrem/yr (NYSDEC TAGM 4003) for intended land use.
- 16.23 - A uranium guideline of 60 pCi/g total U was previously developed for all of the Tonawanda sites in 1988 by ANL for the DOE. For the Ashland sites, this guideline is superceded by the 40 pCi/g Th-230 guideline. The Th-230 guideline was developed specifically for the Ashland sites taking into account the intended land uses and the effects of all the radionuclides at their relative distribution at the Th-230 guideline value. At this value, the U-238 concentration remaining at the site is expected to be well below the previously derived guideline. The Th-230 guideline was developed using conservative exposure parameters and assumptions, and used site specific data.
- 16.24 - Dose considerations from DOE, NRC, and NYSDEC were considered in the evaluation of possible Th-230 concentration guidelines. By removing soils exceeding the site-specific derived guideline of 40 pCi/g Th-230, doses to future industrial workers are estimated to fall below the lowest value while also meeting criteria for indoor radon concentrations, total radium

concentrations, and lifetime risk. The dose estimate for a hypothetical non-farming resident at the Ashland sites was calculated in the referenced guideline derivation document as well. This estimate concluded that the resulting dose estimate is approximately 20 mrem/yr, which is less than the recently promulgated criteria of 25 mrem/yr, and much less than the value of 86 mrem/yr as stated.

- 16.25 – Dose considerations from DOE, NRC, and NYSDEC were considered in the evaluation of possible Th-230 concentration guidelines. By removing soils exceeding the site-specific derived guideline of 40 pCi/g Th-230, doses to future industrial workers are estimated to fall below the lowest value while also meeting criteria for indoor radon concentrations, total radium concentrations, and lifetime risk. The dose estimate for a hypothetical non-farming resident at the Ashland sites was calculated in the referenced guideline derivation document as well. This estimate concluded that the resulting dose estimate is approximately 20 mrem/yr, which is less than the recently promulgated criteria of 25 mrem/yr.
- 16.26 – USACE has begun to research issues regarding PRPs and will pursue all appropriate means to seek reimbursement from responsible parties on behalf of the Federal Government. However, at this time, no decisions have been made regarding specific parties to pursue nor have offers of indemnification been made by USACE to resolve any liabilities that the Federal Government may have.
- 16.27 – Documentation relating to calculations used in the cost evaluation of the investigated remedial alternatives (including volume estimates) have been placed in the Administrative Record and are available for public review. A major component of the cost analysis is the volume of the soils determined to require removal and disposal. The cost estimates used for the development of the revised PP used volumes calculated based on a model of the site contamination generated using existing soil contamination characterization results from all historical sampling conducted at the site. The calculations and results of the modeling have also been placed in the Administrative Record.

It should be noted, however, that the cleanup of the Ashland sites will not be driven by any previous or future volume estimates generated by modeling site conditions. The cleanup of these sites will be driven by the established cleanup criteria. The cost estimates and their corresponding volume estimates were generated and used in the CERCLA process to help evaluate proposed remedial alternatives. The volumes ultimately removed and actual remediation costs will vary as the soils found to require removal during the remediation process are excavated and shipped off-site for disposal.

- 16.28 – Disposal options for excavated soil are evaluated in the site's detailed cost estimate. These cost estimates are available and have been entered in the administrative record. CERCLA provides that cost is a criteria for evaluation of remedial alternatives, but that it may only be used to compare those remedial alternatives which are protective of human health and the environment and which will comply with ARARs. Among the alternatives considered, the selected remedy is the lowest cost which is both adequately protective and complies with ARARs. Appropriate disposal facilities were evaluated under DOE and are being evaluated by USACE in an effort to reduce cost without compromising the final remedy. The selection of the ultimate disposal site will be addressed as part of the Remedial Action phase of the cleanup using the standard

government procurement procedure after completion of the remedial design and prior to commencement of the remedial action.

To assure that estimates do not drastically underestimate actual costs, it is assumed that soils exceeding the cleanup guideline will be excavated and shipped to an off-site disposal facility in the western portion of the United States. The cost of disposal per cubic yard is a negotiated cost and is not intentionally inflated or misrepresented in cost estimates. The ultimate goal of each cost estimate is to allow USACE to accurately project funding requirements for activities such as the remediation of the Ashland sites. It is not beneficial to underestimate or overestimate potential disposal costs.

16.29 - The selection of the ultimate disposal site will be addressed as part of the Remedial Action phase of the cleanup using the standard government procurement procedure after completion of the remedial design and prior to commencement of the remedial action.

16.30 - USACE will review the contractor's transportation and disposal plan to ensure that it complies with all applicable or relevant and appropriate laws, regulations and executive directives, and is protective of human health and the environment. The selection of the ultimate disposal site will be addressed as part of the Remedial Action phase of the cleanup using the standard government procurement procedure after completion of the remedial design and prior to commencement of the remedial action.

16.31 - A concern was raised over the differences in radionuclide concentrations presented in the RI report and subsequent presentations. The averages shown on RI page 4-159 are based upon the "short list" of data shown in the associated tables (4-24 and 4-42). When these short list data locations are plotted on the site drawings, they include only those borings located in the more highly impacted portions of the sites.

The averages used in subsequent presentations are based upon the full data set for each of the sites (found in Tables A-10 & A-15 and A-12 & A-17). These full data sets contain approximately 1.5 times the data that is in the short lists. Since the full data sets include the lower readings from the "non-impacted" portions of the sites, the averages are lower.

16.32 - USACE has begun to research issues regarding PRPs and will pursue all appropriate means to seek reimbursement from responsible parties on behalf of the Federal Government. However, at this time, no decisions have been made regarding specific parties to pursue nor have offers of indemnification been made by USACE to resolve any liabilities that the Federal Government may have.

16.33 - USACE is addressing all FUSRAP sites, including the Ashland sites, pursuant to the authority of and in compliance with the CERCLA (42 U.S.C. Section 9601 et seq.) and the NCP (40 CFR Part 300). Additionally, in accordance with 32 CFR 651.8, USACE has and will integrate appropriate NEPA procedures into the process required by CERCLA. The CERCLA process is deemed to satisfy the requirements of NEPA.

16.34 - When FUSRAP was transferred to USACE, Lieutenant Colonel Michael Conrad, Commander of the Buffalo District, met with all key stakeholders for the Tonawanda sites. Three

representatives from F.A.C.T.S. were included in this meeting. Representatives of this group also submitted comments, both at the public meeting and in writing. Their concerns, as stated in these comments to USACE, have been considered in the decision regarding the remedy selection, and the responses are included in this Responsiveness Summary.

The PP was issued on November 10, 1997 and USACE granted a 30-day extension to the comment period. An additional 11 days was added to this extension after several members of the public requested additional time for preparing their comments. With the extension, the comment period totaled 71 days. Other extensions were considered, however, USACE determined that additional extensions were not appropriate.

- 16.35 – A Federal Facility Agreement is only required pursuant to Section 120(e) of CERCLA, as amended (42 U.S.C. 9620(e)) when a facility is placed on the list.
- 16.36 – The revised PP for the Ashland sites is one component of the CERCLA documentation of the remediation of the Tonawanda Site as a whole. The document distributed for public comment represents the final version of the revised PP, based on the RI/FS published in 1993 and comments received on that document relevant to the Ashland sites, the guideline derivation document published in July 1997, and the USACE version (Alternative 2A) of the originally stated Alternative 2 in the 1993 PP. The USACE Alternative 2A is equivalent to the Alternative 2 developed by the DOE except that a site-specific guideline is used instead of the generic guidelines.
- 16.37 – Site data were used in dose and risk calculations to calculate the Th-230 guideline value for Alternative 2A. This data included radiological data collected during the RI activities and stored in the site database. Other studies have been performed (specifically referencing the ORAU study) that could be used in dose and risk estimates. This data and the appropriate quality assurance and quality control information is not, however, maintained in the site database. Considering that the site database already contains data from hundreds of samples, it was not considered appropriate or necessary to incorporate the ORAU (or other) uncontrolled data.
- 16.38 – Estimates of the radionuclide concentrations were made for the Ashland Sites using all available Ashland and Seaway data. The first estimate was the average concentrations for the site in the current state before any removal actions are initiated. The average concentrations (95% UCL of Mean), including background, for Ra-226, Th-230, and U-238 were 8.59 pCi/g, 111 pCi/g, 27.2 pCi/g, respectively. After removing soils with Th-230 > 40 pCi/g, the average concentrations (95% UCL of Mean), including background, of the remaining soils were estimated for Ra-226, Th-230, and U-238 to be 1.22 pCi/g, 12.4 pCi/g, and 6.26 pCi/g, respectively. The DOE had considered another approach for remediation that would have resulted in a 2-meter thick soil layer with a uniform soil concentration of 40 pCi/g Th-230. Under this approach, the average concentrations of the remaining soils were estimated for Ra-226, Th-230, and U-238 to be 2.7 pCi/g, 40 pCi/g, and 8.8 pCi/g, respectively. This approach is not being considered by USACE.
- 16.39 – USACE cannot respond to statements concerning DOE's policies or DOE's response to Freedom of Information Act requests.

- 16.40 – A uranium guideline of 60 pCi/g total U was previously developed for all of the Tonawanda sites in 1988 by ANL for the DOE. For the Ashland sites, this guideline is superceded by the 40 pCi/g Th-230 guideline. The Th-230 guideline was developed specifically for the Ashland sites taking into account the intended land uses and the effects of all the radionuclides at their relative distribution at the Th-230 guideline value. At this value, the U-238 concentration remaining at the site is expected to be well below the previously derived guideline. The Th-230 guideline was developed using conservative exposure parameters and assumptions, and used site specific data.
- 16.41 – A concern was raised over the apparent change in average concentrations of soils to be remediated at the Ashland sites between the RI report and subsequent presentations. The averages shown on RI page 4-159 are based upon the "short list" of data shown in the associated tables (4-24 and 4-42). When these short list data locations are plotted on the site drawings, they include only those borings located in the more highly impacted portions of the sites. The averages used in subsequent presentations are based upon the full data set for each of the sites (found in Tables A-10 & A-15 and A-12 & A-17). These full data sets contain approximately 1.5 times the data that is in the short lists. Since the full data sets include the lower readings from the "non-impacted" portions of the sites, the averages are lower.

Snyder, Sarah

From: NANCY J STICHT [Nancy.J.Sticht@LRB01.usace.army.mil]
Sent: Wednesday, January 21, 1998 1:14 PM
To: slsnyder@bechtel.com
Subject: League of Women Voters

Forwarded

From: MICHELLE F BARCZAK
Date: 1/21/98 11:39AM
To: NANCY J STICHT
To: DAVID J CONBOY
To: TIMOTHY E BYRNES
Subject: League of Women Voters

17.1 | I spoke to Lee Lambert of LWV after our meeting this morning. After explaining that I was following up on Nancy's call, I told her that the Commander did not believe that it was necessary to extend the comment period but that he would extend the same courtesy to her group that had been extended to FACTS. Specifically, I said that the District had agreed to accept a supplementation of FACTS' submittal up until early next week. She indicated that next week would be impossible for her group to do logistically. I then suggested that she put together, in writing, a brief summary of her group's specific problems regarding their ability to provide comments and that the LTC may find it appropriate to consider accepting comments provided by their group beyond the extended time provided to FACTS. However, I was very careful not to promise any additional time. I also tried to make the point that while everyone's comments are important to us, it is important that we move on with the process.

17.2 | Ms. Lambert also asked whether all of the public's (FACTS') questions had been answered because she felt that comments could not be provided if they did not have all of the information that they asked for. I told her that we had or shortly would be providing all available answers and documents to FACTS.

Michelle

5.17 Responses to LWV/Lambert Comments

17.1 & 17.2 – The PP was issued on November 10, 1997 and USACE granted a 30-day extension to the comment period. An additional 11 days was added to this extension after several members of the public requested additional time for preparing their comments. With the extension, the comment period totaled 71 days. Other extensions were considered, however, USACE determined that additional extensions were not appropriate.

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